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ANNUAL ADDRESS

DELIVERED BEFORE THE

PHILADELPHIA MEDICAL SOCIETY,

AT ITS

MEETING HELD ON THE 26TH MARCH, 1860.

BY

R. LA ROCHE, M.D.

Published by order of the Society.

PHILADELPHIA:
COLLINS, PRINTER, 705 JAYNE STREET.

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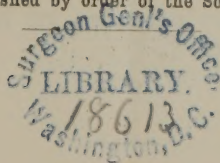
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NOTICE.

THE author deems it proper to state that he was not so indiscreet as to inflict on the members of the Philadelphia Medical Society the reading of the whole of this long essay. The latter was prepared some time ago to fulfil an object different from that to which it was ultimately applied. In looking around, when called upon to deliver the annual address before that Society, for some topic appropriate to the occasion, it occurred to him that the subject treated of in the essay might, if considerably curtailed and somewhat modified, prove of interest to the members. He therefore selected such portions of it as suited the purpose in view, and gave it the form of an address. At the suggestion of some friends in and out of the Society, who were conversant with the original manuscript, the essay is now printed in its entirety; the omitted portions, too numerous and too much interwoven with the rest to be indicated by asterisks or otherwise, being restored.

A D D R E S S .

GENTLEMEN: In appearing before you this evening as the substitute of a distinguished fellow-member, who is unable, from domestic engagements and the pressure of professional avocations, to comply with your wishes that he should deliver the annual oration required by our statutes, I must solicit your kind indulgence for the imperfect manner in which, I feel confident, I shall execute the task assigned to me. I am not unmindful of the fact that by yielding to your expressed desire that I should act in the place of the duly elected orator; or, to speak more correctly, by offering my services on the occasion, I may probably lay myself open to the charge of exhibiting, and being impelled by, an excess of groundless vanity and a love of notoriety. But I trust that my motives for placing myself in the position in question will receive a different interpretation at the hands of those I have the honor of addressing, as well as of the rest of the Society, and that I shall be believed when I say that my reasons for assuming a duty which another and more competent individual had been selected to perform, and would, I have not the most distant doubt, have performed in a more satisfactory manner, were, in the first place, to prevent that duty being passed over by default; and, secondly, to embrace the opportunity thus offered to me to perform another duty, already too long delayed, by calling your attention to sundry statements ventured upon, in another place, by several individuals, relative to events connected with our application for admission into the State Medical Society, and the retirement of many of the members of this body from the ranks of the Philadelphia County Medical Society—statements in which the motives of action of some of those members were insultingly impugned, and their mode of proceeding grossly misrepresented. After having disposed of this subject, which I thought would occupy but a few moments, I had intended to devote the remainder of this address to the consideration of some other theme, of a more interesting character, in an historical, literary, and professional point of view.

But both heads of my double monster have assumed such gigantic proportions, that I should, were I to present them together, consume much

more of your time than you would be willing to spare me this evening. I must, therefore, divide the materials I have collected, and, selecting the subject I had proposed as the special topic of this discourse, postpone the consideration of the other points, to which reference has been made, to the next meeting, when I hope, health permitting, to be able to perform that duty fully and satisfactorily.

The subject I have selected for my present purpose, and which, I trust, will not be regarded as irrelevant to the occasion, consists in an examination of one of the Satires of Horace, in its application to questions of a professional nature. In this Satire, the 5th of the 1st Book, Horace gives an account of a journey he performed from Rome to Brundisium, the Brindisi of the present day, an important city of Calabria, on the Adriatic Sea, and the then capital of the Salentines. This journey, the principal details and incidents of which I must, for the purpose of perspicuity, relate before touching on the professional questions it raises, was undertaken for objects of a political character, namely, the settlement of the difficulties which had arisen between Octavius and Marc Antony, the latter of whom was approaching Brundisium with hostile intentions, while the former had concentrated near by a large portion of his fleet, and the legions recently returned from Gaul, under the command of Agrippa, ready, should negotiations take an unfavorable turn, to resort to the chances of war. It was on this occasion that the well-known treaty of Brundisium was signed, one of the principal effects of which, besides averting from Italy the horrors of an impending civil war, was the reconciliation of Octavia, the sister of Octavius, with her unfaithful husband, Antony.

The commissioners on this peace errand, whom Horace accompanied, rather, as it would appear, in the capacity of an agreeable companion than of an official attaché, were three of his devoted friends and patrons—Mæcenas, Coccius, and Fonteius Capito. The first two of these the poet represents as the properest persons in the world to settle differences among friends, while, in reference to Capito, he remarks that he was a most charming and accomplished companion—*ad unguem factus homo*—and the intimate friend of Antony. History informs us that Mæcenas, who had already several times served in the capacity of negotiator between the two rival Triumvirs to heal various differences, slight or important, that had arisen between them, was on this, as he had been on former occasions, the representative of Octavius, and that Fonteius acted in a similar capacity in behalf of Antony, while Coccius was intrusted with the delicate and responsible office of umpire between the contending parties. The other companions of Horace, during the whole or part of the journey, were Virgil, Plotius Tucca, L. Varius, whom he regarded as three of the most candid men alive, to whom he was bound by the ties of the warmest friendship. To these must be added Heliodorus, a rhetorician, whom the

poet characterizes as "the most learned by far of the Greeks," but who is not known to us otherwise than through means of the compliment thus paid to him, and lastly, Sarmentus and Messius Cicirrus. These two belonged to that class of men who were admitted to the table of the Roman grandees to play the part of buffoons, and experience there, without complaint, all the affronts and ignominious treatment which it pleased their patrons or the invited guests to inflict upon them. Of Cicirrus we know nothing. Sarmentus is referred to by Plutarch, in his *Life of Antony*, as being one of the minions of Octavius. He is also mentioned in the same capacity by Juvenal in his 5th Satire.

The distance from Rome to Brundisium is, if my memory serves me right, 378 Roman miles. The time consumed in the accomplishment of this journey, which Horace regarded as a very long one, was fourteen days, being at the rate of 27 miles per day. The event in question occurred, according to the best authorities, in the latter part of the spring of the year 713 of Rome, forty-one years before the Christian era. The poet, who in this celebrated composition imitated particularly the third Satire of Lucilius, in which this graceful writer describes a journey to Capua, and thence to the Straits of Messina, was in the 26th year of his age. He already occupied a high rank among the authors of his time, having issued many of his charming epistles, epodes, odes, and satires, and rendered himself especially conspicuous the year before by the 3d Satire of the 1st Book, which, though he therein turned Mæcenas into ridicule, gained him the friendship and patronage of that influential man, in consequence, it is supposed, of the still greater ridicule he cast on the singer Trigelius, for whom Mæcenas entertained a great dislike.

I must be allowed to pause a moment, for the purpose of calling your attention to the remarkable composition of this embassy. The world had surely never, and, I may safely say, has not since witnessed, such an unusual assemblage of intellectual giants—such a combination or constellation of prodigies in the walks of literature—living on terms of close personal intimacy, and undertaking a long and fatiguing journey with no other ostensible object than that of enjoying each other's company. Can we think of Horace and Virgil riding, driving, walking, conversing, jesting, eating, drinking together, without experiencing a feeling of amazement that two stars of such wondrous brilliancy, whose claims to the unqualified admiration of the literary world are universally acknowledged, and of whom the like, in the department they adorned, has never been seen, should have been permitted by Providence to breathe contemporaneously the same atmosphere? I shall not insult you by pointing out the basis on which those claims rest. No man enjoying the benefits of a fair education—no one, especially, having the least pretension to mental culture—need be

told of the poetic achievements of the authors mentioned, and of the pre-
eminent position they occupy in the literary hierarchy.

The amazement alluded to is not a little increased when we find associated with Horace and Virgil two stars of scarcely less brilliancy in the same department—L. Varius and Plotius Tucca—poets whose reputation nearly equalled, at the time, at least, that of their companions. Of the latter it will be sufficient to remark that the individual whose talent as a poet, and whose friendship for Virgil and Horace, could procure him the distinction of being appointed by Augustus, along with Varius, to revise the *Æneid* after the death of its author, and bring it before the public, must deserve to occupy a high position amid the luminaries of the glorious age in which he flourished.¹ Of Varius we know more. He was the beloved of Catullus, the author not only of a highly prized poem in praise of Cæsar, but of that celebrated tragedy—*Thyestes*—which Quintilian, in his tenth book, compared to the finest plays of Sophocles and Euripides. He was regarded, previous to the appearance of the *Æneid*, and when Virgil was chiefly known as a pastoral poet, as the first epic poet of Rome.

“Forte epos acer,
Ut nemo, Varius ducet,”

says Horace,² who, besides, considered him as the writer who was most worthy to celebrate the exploits of Agrippa,³ and associating him with Virgil, even after the latter had become more distinguished, viewed him in the light of a representative of the best class of poets in the Augustan age.⁴ And these men were under the leadership of Mæcenas, who, though not himself a writer of great renown, has immortalized his name as the prince of patrons of all branches of human knowledge!!

Horace left Rome by the Porta Capena—otherwise called the Triumphal Gate, now the Gate of St. Sebastian—in company with Heliodorus, and arriving in the evening at Aricia, not far from the present La Riccia, a village situated at the foot of Mons Albanus, a transverse shoot of the Apennine, at the distance of 16 miles from the capital, put up at a small inn. The next day the travellers reached Forum Appii, near the present Torre de Tre Ponte—the old Tripuntium—so interesting from its connection with St. Paul’s journey to Rome when he first met his countrymen from that city. “And so we went towards Rome. And from thence, when the brethren heard of us, as far as Appii Forum and the Three Taverns; whom when Paul saw he thanked God, and took courage.”⁵

¹ Donat. Vit. Virgil. §§ 52, 53, 56; Schel. ad Pers. Sat. ii.; Weichart, *Poetarum Latinorum Reliquiæ*, p. 217, fol.

² Sat. lib. i. 10; v. 43.

³ Ode, lib. i. 6.

⁴ *Ars Poetica*, v. 54.

⁵ Acts xxviii.

The Forum, which was founded some four hundred years before Horace, he found crowded with sailors and surly innkeepers. The distance of this place, the ruins of which are still to be seen, was forty-three Roman miles. Thus Horace and his friend took two full days to go over a distance which, as the former acknowledges, more vigorous travellers usually accomplished in one. They were going along the Appian Way, the most commodious, as Horace remarks, for those who travelled at a slow pace. It was considered the queen of roads—*Regina Viarum*—formerly decorated with sumptuous mausoleums, temples, triumphal arches, &c., the construction, the repairs and the embellishment of which constituted one of the titles of glory of the great Cæsar, of Augustus, of Vespasian, Nerva, Trajan, and Theodoric. This famous road, which led from Rome to Brundisium, through Terracina and Capua, was built as far as the latter city by Appius Claudius, from whom it derived its name, and was subsequently extended as far as the Ionian Sea by the Emperor Trajan and several of his successors. The present road to Naples does not follow exactly the course of the Appian Way the entire distance from Rome to Terracina; for while the latter commenced at the Porta Capena, the other begins at the Gate of St. John of Lateran, near the great church of that name, and running for some distance to the left of the Appian Way, only joins it near Albano.

Be this as it may, the point of interest for our present purposes, in this connection, is that the Appian Way was carried in a perfectly straight line through the Pontine Marshes, from a station situated at the foot of the Albanian Hills, and known under the name of Sub Lanuvia, to within a short distance of Terracina. This was the Ab-Lanuvium so often mentioned by Cicero in connection with Milo (Cic. pro Mil.), and alluded to by Horace as being infested by wolves. From this it follows, that when Horace arrived at Forum Appii, he had reached far into the midst of those marshes, and had, besides, passed through several villages or small towns situated within their area—as Ad Sponsas, Tra Tabernæ, and others—none of which he indicates by name, and where, consequently, we may presume he did not stop.

I may here mention, that though Horace says nothing of the mode of travelling he adopted to reach the Forum, or, more properly, in consequence of his silence on the subject, as also for the reason of the short day's journey he made, and for the expression "*altius præcinctis*," which is used, and has reference to the action of a man who raises his dress according to the haste which he wishes to make, commentators have expressed the belief that he proceeded on foot. The correctness of the opinion has, I am aware, been denied by Capmartin de Chaupy,¹ but it receives no little support from the circumstance that, for hygienic purposes, the ancient

¹ Découverte de la Maison de Campagne d'Horace, iii. 397.

Romans, even those possessing large estates, and enjoying all the comforts and luxuries which wealth can command, were much addicted to pedestrian exercise; and that Horace, being young and active, could scarcely fail to follow the example of those in whose society he was thrown.

The water at Forum Appii being, from its paludal nature, of very bad quality, and, as Horace says, unfit to drink; and the poet being deterred, in consequence of laboring under a diseased condition of his eyes, to which reference will be made presently, from indulging in the use of wine, he declared war, as he tells us, against his stomach—*ventri indico Bellum*—an expression used before him by Cato, and subsequently imitated by the Emperor Julian, and, declining to eat supper, waited impatiently for his companions, who, uninfluenced by reasons of the kind, loitered at the table.¹

From this place the travellers continued their journey by water in a barge drawn by mules and running along a canal constructed for purposes of drainage and for the facilities of transport and travel, and the water of which was furnished by two rivers, the *Nymphæus* and the *Ufens*. The embarkation took place at night, which, as Strabo, who wrote at a period near that of Horace, tells us, was the time usually selected. Frogs and teasing gnats spoiled the rest of the poet. "The seamen and passengers," he says, "warmed by the bad wine they had drawn, fell to singing by turns the praises of their absent mistresses. At length the passenger, unable to hold out any longer, fell asleep, which the lazy bargeman perceiving, untied the mule to send her a-grazing, and by means of the cord making fast the boat to the point of a rock, lay himself quietly down on his back and snored." It was day before the travellers perceived that the barge stood still. At length they once more got under way, and reached the Fountain of *Feronia* on the fourth hour of day, which at the season of the

¹ The water of this place was at the time in bad repute, and even now is regarded as possessing deleterious qualities. Hence the people of the country seldom drink anything but wine. Some modern travellers are disposed to doubt the correctness of this charge, having, as they say, found the water of the canal of excellent taste, soft, and perfectly innocuous. They state that at a distance of about 340 feet from the canal, the river *Cavata* rolls clear and pure water, originating in the *Apennines*, not far from *Coza*—an ancient city with Cyclopean walls, where still may be seen remains of temples dedicated to *Hercules*, and *Castor* and *Pollux*—and situated at an elevation of 1,435 feet above low (sea) water-mark.

It is to be remarked, in explanation, that these travellers visited the country, and tasted the water in question, early in March, after a rainy winter, when the waters were high and the marshes overflowed. Horace, on the contrary, was doing so at a season when the water is usually low and the streams nearly dry. In the first case, the marshes were covered; in the second, they were bare and the source of paludal decomposition. In the latter circumstance, the water flowing in the canal could scarcely be otherwise than impure, and injurious to health.

year this occurred, corresponded to 10 o'clock A. M., according to our mode of computing time. The distance travelled in the barge was nineteen Roman miles. The fountain occupied the spot where now stands the ancient tower of "Torre-Otto facia," near Ponte Alto, and a place called Tripontes—the Triponti of modern charts. There they landed, and, after saluting the nymph of the place, washed their hands and faces in the limpid water of the fountain. Virgil, in the seventh book of the *Æneid*, speaks of the shady woods which adorned this sacred spot, and Servius, his commentator, tells us that the divinity of Feronia was the protectress of the Freedman. There the ceremony of emancipation was performed—the slave being seated on a chair in the temple, inscribed with these words: "Bene meriti servi sedeant: surgenti liberi."¹ On that score, as also out of regard to the memory of his father, who belonged to the class of freedmen, Horace may very naturally be supposed to have entertained feelings of deep veneration for the goddess of the place. But however this may be, the water of the neighborhood being brackish and unwholesome, it was natural that the deity who placed within reach of the traveller a spring of soft, sweet, and cool water, should be by him fervently adored.

Having performed his ablutions and partaken of dinner, Horace resumed his journey; and after a short ride of three miles reached Anxur or Terracina, the last city of the present Roman States, in a southern direction, and the terminus of the Pontine marshes. The Anxur of those days was situated high above the plain, so that its white walls and houses, and temples, could be seen at a considerable distance. "*Impositum saxi late condentibus Anxur.*" The present town extends lower down, and looks gloomy, and in great measure deserted. At this place Horace expected to be joined by Mæcenas, Coccius, and Fonteius Capito, on their way to Brundisium. He tells us that he was here obliged to anoint his eyes, which, as we have seen, were inflamed, with black salve. "*Hic oculis ego nigra meis collyria lippus illinere.*"

His friends and companions soon arrived, and the next day the party crossed the defile of Lantulæ, celebrated for the defeat of the Samnites two hundred and seventy-four years before, and noted in the second Punic war as the stronghold of Fabius Maximus, who, defending it with a small body of troops, effectively prevented the passage of Hannibal by the Appian Way. They soon arrived, after a march of thirteen and a half miles, at Fondus—the Fondi of our times. At this place, as we learn from the poet, Aufidius Luscus was prætor, whom the travellers left, highly diverted "with the vanity of that pitiful scrivener," as he is styled, who strutted about in his prætexta adorned with the Latus Clavus, and caused to be carried before him a censor with burning coals.

¹ Servius, quoted by Chivarius, 1014.

The next stopping place of the party was Formia, a seaport town thirteen miles beyond Fondus. Horace gives it the name of *Urbs Mamurrarum*, from its belonging to, or being the birthplace of, a family named Mamurra. It is the Mola de Gaeta of modern charts. The scenery about Mola de Gaeta is connected with that described in the Odyssey, and even the Fountain of Artasia, where Ulysses met the daughter of Antiphates, king of the Læstygones, is identified with one existing at no great distance, and remarkable for its beauty. Near the Mola, and about midway to the town of Gaeta, Cicero possessed a villa, well known under the name of Formianum, the scene of his political conferences with Pompey, and where Scipio and Lilius often went to recreate and rehearse the games of infancy. Near this spot the great orator and writer was assassinated. The travellers were invited to the house of Licinius Varro Murena, the brother of the beautiful Terentia, while Capito, who appears to have been the caterer of the party, entertained them at supper—*Murena præbente domum, Capitone culinam*.

The next day, after a drive of 18 miles, they were made perfectly happy—*Postera lux oritur multo gratissima*—by meeting at Sinuessa, the ancient Sinope of the Greeks, and the Bagnoli of our time, with Virgil, Plotius and Varius, who had probably come by sea, or were waiting there for the arrival of Mæcenæ. The party lodged that night at a small village nine miles beyond Sinuessa, and situated near a station called from the bridge of Campania *ad pontem campanum*, on the Volturnus, near Limara, where the town commissioners, or *parochi*, supplied them, as they were by the law *Julia de Provinciis* bound to do all Roman magistrates travelling on public business, besides lodgings, with salt, fuel, hay, straw, and other articles of like kind.

Early next day the party, followed by mules loaded with their baggage, reached Capua, the ancient capital of the Campania. That city must not be confounded with the Capua of modern times. It stood where now we find the village of Santa Maria de Capoa, while the present Capua is located on the spot where stood formerly the little town of Casilinum, three miles from the former. Soon after the arrival of the party, Mæcenæ engaged in a game of tennis, while Horace and Virgil retired to sleep, giving as a reason that the game is hurtful to tender eyes and weak stomachs—*Namque pila lippis inimicum et ludere crudis*. As we have seen that Horace labored under an affection of the eyes, we must conclude that what he says of tender eyes has reference to his own ailment, while we infer that Virgil, who, like himself, refrained from the diversion in question, must have been a sufferer from dyspeptic disturbances.

From Capua the travellers proceeded to a villa belonging to one of the party, Coccius, situated at a short distance from Caudium, a small village twenty miles beyond the former place, and in the vicinity of which were

located several public houses, erected for the accommodation of wayfarers. I must remind you that Caudium has acquired an historic celebrity from the circumstance that in its vicinity the Romans experienced a summary defeat at the hands of the Samnites, in the year of Rome 422, and underwent the disgrace which from the days of Livy has been known under the name of the Caudine forks—*furcæ Caudinæ*. From this place Horace and his friends rode directly to Beneventum, a city 28 miles from Capua, in the territory of the Harpini. Soon after leaving Beneventura, they began to descry the mountains of Apulia, so well known to our poet, for he there spent a portion of his early days, and which are scorched by the raging W. N. W. wind, the Atabalus or Appulus of olden times, and the Sirocco of ours.

Diverging for a while from the Appian Way, which they had heretofore followed, the party, for reasons which have been variously interpreted, selected a different and less frequented route, running between the two branches of the Appian, and crossing the mountains to Brundisium. After sleeping at a small farm house near Trivicum, 28 miles from Beneventum, where they were much incommoded by the smoke arising from a fire made out of moist branches mixed with green leaves, the party travelled twenty-four miles in post-chaises, provided for them by the commissioners at the expense of the government, and put up for the night at a small town, the name of which Horace does not mention, on the score of its not being fit to be described in verse. Commentators have, as might be expected, exercised their wits in endeavors to discover the name and location of this place. The result arrived at by some is, that it was Equus Justicus, a small town on the Appian Way, or, as Dacier has it, Equotuticum, which was situated at the distance of twelve miles before reaching the present town of Novara. The supposition would seem to acquire probability from the circumstance of the position of the place, and from the fact that the word Equatutium could not enter into the construction of a hexameter. Nevertheless, plausible as this may be, others—Walckenaer,¹ Capmartin de Chaupy²—with better knowledge of the topography of the country, and after a careful examination of the question at issue, have concluded that the nameless town was no other than Asculum, the former of whom maintains, at the same time, that Horace had reference, not to the unharmoniousness of the name, but to the indecency of the last syllable, *culum*, which certainly is, to say the least of it, neither poetical nor fit for ears refined.

The next stopping-place of the travellers was Canusium, which once figured among the most important and largest cities of Italy, but has now dwindled into an insignificant village, whose name has merged into Canosa.

¹ Histoire de la vie et des poésies d'Horace, i. 249.

² Op. cit., iii. 496.

Here Varius left them, "not without tears shed on both sides." Leaving Canusium, and shortly after rejoining the Appian Way, they proceeded to Rubus, a small town of Apulia, some twenty miles from the former. They were already heartily fatigued of their long journey, which had been rendered peculiarly incommodious by the frequent occurrence of heavy rains. The next day they reached Barium, a city of Apulia, on the coast of the Adriatic, twenty miles beyond Rubus. The weather had now much improved; but, on the other hand, the road has, as may very naturally be inferred, become unfit for rapid and pleasant travel. Prosecuting their journey from this place along the Via Egnatia, which ran along the shore of the Adriatic, they soon arrived at Gnatia, midway between Barium and Brundisium. You may recollect, gentlemen, that it is while speaking of this place that Horace, after stating that its lymphatic inhabitants (as he styles them) excited considerable mirth among the members of the travelling party, by endeavoring to persuade them that incense ignited and burnt spontaneously in the portico of the Temple (a miracle which by the way is noted by Pliny), made use of an expression which has passed down to the present generation in the form of a by-word to denote incredulity, *Credat Judæus Apella non ego*.

In regard to the true signification of the word *Apella*, interpreters have held widely different opinions; some maintaining that the word is a compound constructed by Horace, to mean *Sine pella*, without skin or circumcised; while Scaliger, Dacier, and others suppose, with great appearance of probability, that it was the name of some Jew well known at Rome. I may mention that among the ancients the word lymphatic was used to designate enthusiasts or individuals addicted to miracles and wonder-workings; and that in the opinion of some writers, Horace, in speaking of the spontaneous ignition of the incense had reference to the miracle of Elias, who made fire to descend from heaven and consume the sacrifice.

From Gnatia the party proceeded on their journey, and soon reached Brundisium. Having in this way traced the steps of this most extraordinary group of travellers from the imperial city to the terminus of their journey, so far as the narrative of Horace extends, we must leave them there to make the arrangement necessary towards the settlement of the affairs of state intrusted to the leaders of the party, and allow these to proceed to Tarentum, where the Peace Congress was to assemble, and next to get back to their starting point in the best way they may. I must remark, in closing this narrative, that Horace and Virgil very probably accompanied Mæcenas to Tarentum, and that the former embraced the opportunity to visit his friend Septimius, at whose house he versified, for the amusement of Mæcenas and his other travelling companions, the

account of their journey from Rome to Brundisium, to which I have called your attention.

Horace, as you will perceive, travelled over a no inconsiderable portion of what has long been, and still continues to be denominated, the *Campagna di Roma*. This, the land of the Latins, constitutes the southern part of the great basin, through which the Tiber flows to the sea, and which extends from the Ciminian Hills, north, to the Alban Hills, south, between which there is left a considerable gap stretching in a southerly direction to the Circæan promontory. The *Campagna di Roma* must not be confounded with the *Campania*, a province or region of Central Italy, bounded on the north by the *Latium* or *Campagna*, on the east by the mountains of *Samnium*, on the south by *Lucania*, and on the west by the *Tyrrhenian Sea*. It is a province of the present kingdom of *Naples*. Horace crossed over also, in its longest diameter, the immense paludal surface occupying the level plain mentioned, which, from the baneful effects it exercises on all who are exposed to its influence, has acquired a painful notoriety, and is known, all the world over, by the name of the *Pontine Marshes*. The *Campagna* of Rome, or ancient *Latium*, which must, at one time, have embraced only the country in the immediate vicinity of the capital, seems in process of time to have extended over those marshes, and in some places to have included both hill and plain. The latter, in very early times, was amply peopled and spotted over with a large number of small cities, the inhabitants of which were, to a certain degree, independent of each other, feeding their flocks in the vicinity of their own residences, or cultivating the land. Ruins now existing, sufficiently attest the fact, that prior to the domination of the Romans, the population of the *Campagna* was considerable. The towns, indeed, were of no great magnitude; but they were thickly scattered over the country. The *Cereatinæ*, the *Sutrians*, the *Veiens*, inhabited the northern portion of the Roman basin on the slope of the *Cimino*. The *Capenates*, the *Faliceans* were separated by the *Soracte*; finally, the *Sabines*—the hard *Sabines* as they are sometimes named in history—were on the east, and had for their neighbors, the *Volscians*, the *Albanians*, and the *Rutulians*.

Destroyed at various times during the several wars which broke out among these independent communities, the towns in question were finally swept away by the Romans at a very early period, with the exception of *Tibur* and *Præneste*, which were on the mountains. These cities or towns of the plain had sometimes been peopled by colonies from the capital; but, often rebelling, and being as often punished, they were at length deserted, their walls frequently serving only as a protection to the parks and gardens of the patricians who erected villas on the ruins.¹ The surrounding

¹ Gell, *The Topography of Rome and its Vicinity*, i. 250.

country was at last almost deserted, and assumed in process of time the condition it now presents.

In the time of Diodorus, who wrote forty-four years B. C., this part was considered already a desert in comparison with its former population and fertility. Strabo also, twenty years later, speaks of the state of wretchedness and decay to which this once populous district was reduced in his day. Sir W. Gell calls attention to the fact that in the census made by Julius Cæsar he only found 150,000 who were Roman citizens. Hence, he remarks, a large portion of the inhabitants of Rome were foreigners or slaves, who must have resided in the city; but the Campagna was probably not less deserted by proprietors, for though studded with the villas of opulent patricians, these without doubt resided generally in the capital. The cultivation of the soil, as Pliny informs us, was left to overseers and slaves, and, in consequence, agriculture languished. Population gradually diminished, for the overseers were scarcely permitted to marry, and among the slaves celibacy was in every way encouraged. Dion, who lived under the Emperor Pertinax, about the year 230 of our era—while, therefore, the Roman Empire was yet flourishing—says that in his time vast solitudes existed in this and other parts of Italy. Under the reign of Theodosius the Campagna was a desert, and Gregory the Great expressly says, "*depopulati sunt agri . . . nullus in agris incola*," and soon after this the ruin of the country was consummated by the invasion of the Longobards, the most fierce destroyers that ever disgraced humanity.

In the 10th century the country began to recover from the afflictions produced by its barbarous invaders. Nevertheless little improvement was effected in respect to its population.

The Pontine Marshes take their origin at Torre Tre Ponti, now the Sixth Post House from Rome, and situated at a distance of about fifty miles from that city. They extend as far as the town of Terracina, the distance of which from the capital is about sixty-eight miles. They are about twenty-five miles in their longer diameter, and vary from six to eleven miles in width. They embrace that portion of the Campagna situated to the southeast of Rome, on the confines of the Neapolitan territory. Their longitudinal axis extends from the southeast to the northwest, along the direction of the Appian Way, which winds its course parallel to the shores of the Tyrrhenian Sea. Those marshes derive their name of Pontine or Pomptine (*Pomptinæ Paludes*) from an ancient city called Pometia, the exact position of which is and has long been a subject of discussion among antiquarians, but is supposed by many to have stood on the site of the modern village of Mesa. In the Middle Ages, during the time of Cassiodorus, they received the name of the marshes of the nineteen (*Decem novium*), from the circumstance that, in the days of Procopius, the

canal mentioned above as running through them, along the Appian Way, was denominated, from its length, the creek of the nineteen.

This portion of the Roman territory, and its prolongation in a north-western direction beyond the Cape of Astura, ungrateful as it is at the present time in point of insalubrity, must nevertheless be viewed in the light of classic ground. Upon it we discover, besides the Feronian Fountain, already referred to as memorized by Horace, many spots described and celebrated by the ancient poets, and particularly by the Mantuan Bard. We cannot forget that the female warrior Camilla, and her father, Metabus, sung by Virgil, reigned at Privernum, near the modern Piperno. The scenes of the six closing books of the *Æneid* were enacted in localities situated to the west of Cisterna, of Albano, and of Velletri, towards the sea, where still stand Ardea, the capital of the Rutulians, over whom Turnus reigned as king; Lavinium, the modern Pratica; Laurentum, near which stood the celebrated villa of the younger Pliny, &c. Nor must I omit to remind you of the episode of the 10th book of the *Odyssey*, in which are related the adventures of Ulysses and his companions in the island of Circe, supposed to have been separate from the main land, with which it subsequently became united through the effect of accumulated deposits of certain rivers. This constitutes the present Circean promontory—the Mons Circæus of Roman times, and the Monte Circello of modern Italy. It is still rich in its wild boars, than which no existing beings can boast of a more ancient genealogy; for they descend in direct line from the companions of Ulysses, and their progenitors were sung by Homer.¹

This noted paludal surface, covered at a very early period by the sea², was, in the earliest historic times, held by a powerful and warlike nation—the Volscians—whose population, judging from the multiplicity of their cities, as also from the important character of their military achievements during the bloody struggles they sustained against Rome in defence of their independence, and the support they extended to the revolted Coriolanus, must very naturally be supposed to have been extensive. Subjected originally to a monarchical form of government, they subsequently divided themselves into a number of confederated republics or states. This change, fostering as it did the erection of particular isolated and even antagonistic interests, tended to divide and weaken the force of resistance of the nation at large, and thereby led to the loss of their independence and to their final subjection, like the rest of the Campagna, to the iron rule of the Romans. The region is bounded on the northeast by the dry fields of Sezza, Sermonetta, and Cisterna. On the west it is separated from the sea by a broad tract or chain of sandy downs

¹ Valery, *Voyage en Italie*, iii. 431.

² Prony, *Description Hydrographique, &c., des Marais Pontins*, xxii. 73.

from thirty-five to seventy feet in height. This tract, which extends from Cape Astura to the Circean promontory, is covered with forests, and perfectly level, and intermixed with marshy spots and pools of stagnant water, so that it is almost as unhealthy as the regular marsh, and the whole tract is often comprised under the same name. On the south it is bounded in like manner by another chain of downs, from twenty to thirty feet high, and uniting the promontory above mentioned to the Apennine chain near Terracina. Finally, it is bounded on the southeast by the last named mountains and the Sepinian Hills.

The fens are occasioned by the quantity of water which falls in the form of rain in the Pontine basin, or flows hither by numberless streams—perennial and torrential—that rise at the feet of the neighboring Volscian Mountains. The principal beds in which the running waters flow, are, towards the eastern part, those of the Amazeno, of the Uffente,¹ and of the Scaravazza; towards the western part, those of the Cavata, and of the Cavatella (which are discharged together in a superb canal which Pio VI. caused to be dug on the side of the Via Appia), of the torrents of Sermonetta, and of Tepia; and finally of the Ninfa. The latter, after having crossed the Via Appia, takes successively the names of Rio Francesco, Fiume Sisto, Fiume delle Volte. The extremely low level of this whole tract affording scarcely any natural outfall for the waters which thus descend into it, together with the accumulation of sand along the seashore, which leaves but a single opening into the sea, account for the formation of these extensive marshes; and there can be no doubt, according to high authorities in matters of that kind, that the whole of this low alluvial tract is of recent origin compared with the rest of the adjoining mainland. Still, as the same authorities add, there is the strongest reason, from physical considerations, to reject the notion, very generally entertained by the Romans and adopted by Pliny, that the whole of this accumulation had taken place within the period of historical record, and more especially the assertion of the great naturalist, that the larger portion of it had taken place after the time of Theophrastus. While admitting this, and admitting also, that the actual swampy tract does not appear to have ever been completely and effectually reclaimed; while, indeed, we have unequivocal evidence of the continued existence of the marshes themselves in all periods of antiquity, it is difficult to resist the conclusion that in early days the condition of the tract was less detrimental to health than it became subsequently, and more particularly than it is in our times. The fact of the immense difference existing in regard to the extent of its population in olden and modern times, would of itself lead to this belief;

¹ *Qua saturæ jacet atra palus, gelidusque per imas,
Quæret iter valles, atque in mare conditur Ufens.*—*ÆNEID*, vii.

for though other causes may very naturally be admitted—as I shall have occasion to point out presently—to have contributed to that effect, yet it is doubtful whether they would have been sufficient to produce it, to the extent we now notice, had they not been most powerfully aided by local or atmospheric agencies of the kind mentioned, affecting the health and abridging the life of human beings permanently exposed to its operation. No other explanation, as it appears to me, can be offered of the change that has occurred in the region in question in regard to the extent of its population. We have seen how matters stood in that respect in former times. How do they stand now? The least accessible portions of the region are tenanted by herds of buffaloes, wild boars, stags, and wild fowls, and the like; while the few inhabitants that remain, are gathered in or about post-houses, or small dwindling villages, and bear on their countenances evidence of the detrimental agency to which allusion has been made.

Of the nature of this morbiferous agent, and of the extent of the injurious influence it exercises on the health, growth, and prosperity of the inhabitants of this region, and of its detrimental effects on even transient visitors, I need say but little in this place. Those effects plainly indicate its paludal character; while the claims of the region to the unenviable reputation of being one of the most remarkable seats of exhalations of that kind the world has seen—in a word, a perfect hotbed of febrile diseases of all grades, from the simplest to the most malignant and pernicious, have long been recognized. Nor need I dwell on the nature of the organic changes entailed by an atmosphere polluted to the extent observed in the region in question on those who are long exposed to its morbiferous agency; inasmuch as they are kindred to those experienced in every other fenny and fever locality, and resulting from the frequent repetition of febrile attacks; or simply from a continuous exposure to the action of the polluted air, without the occurrence of decided disease.

The enlargement of the abdomen, and engorgement of its viscera; the morbid state of the blood as evinced by the simultaneous diminution in the proportion of the globules, of the albumen, of the serum, and sometimes of the fibrin; the whole attended with a bloated, pale, and sallow countenance, flabbiness of flesh, an œdematous condition of the cellular tissue, and at times tendency to ulcers and gangrenous sores, are very generally encountered in the region under consideration. The humiliating degeneracy of the human race, referable to the baneful agency of the poison, is scarcely less marked there than it is elsewhere. Lancisi did not fail to notice, from what he saw around him, the undermining effects on mind and body of an atmosphere thus vitiated; and that matters have experienced no change in that respect since his days, may be easily found on consulting the works of Thouvenel, Carriere, and other writers on the

climate and diseases of the Roman and other Italian territories. As illustrative of the destructive effect of this kind of atmosphere, so far especially as concerns that of the Pontine Marshes, I may refer to the fact that, notwithstanding the amelioration effected in their physical condition from 1801 to 1811, the mortality has always exceeded the births.

Now, amid all the statements and remarks he makes relative to the localities over which he passed, or where he stopped to sleep or eat, from Rome to Terracina, Horace says nothing calculated to make us presume that either he, or any of his numerous companions on the journey, or the travellers he encountered on the road, suffered in any way from the malaria, either of the Campagna at large, or of that portion of it covered by the Pontine Marshes. Nor does he allude to the prevalence of sickness amongst the permanent inhabitants. And yet these marshes, as we have seen, existed, if not to the full extent they have since obtained, at least to a considerable one, and presented the physical conditions characterizing localities of the kind, and were designated by the word *Palus*, which conveys the same idea as the word now used to signify localities of the kind.

Horace speaks of the bad quality of the water, which caused him to remain aloof, supperless, from his companions. But that is all. He does not note—what every one who now visits that ill-fated region notes, and many writers have dwelt upon—the physical appearance so peculiarly characteristic, as just stated, of persons dwelling in a paludal atmosphere. Our surprise naturally increases when we find that the season of the year at which the journey was undertaken and performed is propitious to the prevalence of the fevers which infest the country, not perhaps to the extent noticed during the summer and autumnal months, but sufficiently so to endanger the health or lives of travellers, and especially of residents. Every one knows, too, that it is particularly dangerous to travel along the road over which Horace proceeded after dark, and especially during the night, and that the danger is increased by sleeping while travelling, or at any of the towns or villages or stopping-places on the road. On this subject the testimony of Lancisi, Folchi, Brocchi, Clarke, Chateaufieux, and other writers, is conclusive. We learn from Rigault de Lisle that the evening dew is so greatly dreaded at and about Rome, that as soon as it begins to be perceived all the inhabitants shut themselves up in their houses.

Well, in the very localities where these effects are now constantly observed, at a period of the year when paludal fever prevails usually to a greater or less extent—when, indeed, it sometimes spreads extensively—Horace travelled by day and by night, in the most leisurely manner, too. He slept several nights in villages and at stopping-places situated in the very heart of the marshes, and passed, in accordance with the mode of

travel then pursued—and which, judging from the general manner Strabo speaks of it, must have been pursued at all seasons of the year—a whole night and morning in an open boat running in a canal extending from Forum Appii to the Feronian Fountain, at present about as unhealthy a portion of country as can be found anywhere.

All this was done as a thing perfectly natural to do, without fear—without the most remote expression of apprehension on his part for his own personal safety or that of his travelling companions. What traveller, I may now ask, acquainted with the condition of these localities and their influence in a sanitary point of view, would, unless compelled to do so, venture to undertake such a journey at such a season? What resident of Rome would think it wise to try the experiment? What sane or prudent man would voluntarily abandon himself to sleep while on the road by day, and especially by night, from that city to Terracina? Who, in his senses, would entertain the idea of passing a whole night on a canal along the Appian Way, in an open boat? If such an individual could be found, he would be almost certain to be affected with fever before the expiration of many days.

That the poet and his companions should have experienced no ill effects, or a great deal less than modern travellers or residents would do now, so long as they had not reached the Forum Appii, we can readily understand, for the Campagna generally, as far as the Pontine Marshes, and especially that portion of it which lies in the vicinity of the city, was then in a different and more salubrious condition than it is at the present day. A considerable extent of it has experienced a marked change, and although it was probably at no time completely exempt from febrile exhalations, there can be no doubt that it was less detrimental to health, more habitable, and more fit, as a consequence, to be travelled over, even at night, than it has been for many centuries past. The causes of the change may, to a certain extent, be pointed out.

In former days, at the period when the journey described by Horace was undertaken, Rome was situated—not in name, but in reality—on the seven historic hills and in the intervening valleys. It covered a very extensive area. Commencing at the southern extremity of the Cœlian and Esquiline Hills, it inclined in an eastern and northern direction, passed behind the Viminal and Quirinal, and extending beyond the gates of St. John Lateran and Sta. Maria Maggiore, stretched nearly as far as the hills of Albano. Suetonius, in his life of Nero, states that the city in the time of that emperor stretched almost as far as Ostia, to which that emperor intended to extend it. “*Destinarat etiam Ostia tenus mœnia promovere atque indefossâ mare veteri urbi inducere.*” (chapt. xvi.) Ruins found at a distance of no less than five miles from the present city, along the ancient roads—the Via Appii, the Via Latina, and the Via Tiburtina—and desig-

nated at the present day by the name of *Roma Vecchia*, attest, from that very fact, that they were inclosed within the limits of ancient Rome. These continuous and compact buildings, in connection with others of an isolated character, occupied the entire plateau situated on the eastern side of modern Rome, as far as the sea.¹ Pliny, writing under Trajan, gives us an insight into the magnitude of Rome. Romulus, he says, left the city, having three gates and no more. "When the Vespasians (Vespasian and Titus) were emperors and censors, in the year from its building 826, the circumference of the walls which surrounded it was $13\frac{2}{5}$ miles. Surrounding as it does the Seven Hills, the city is divided into 14 districts, with 265 cross-roads, under the guardianship of the Lares. If a straight line is drawn from the mile column placed at the entrance of the Forum, to each of the gates, which are at present 37 in number, the result will be a straight line of 20 miles and 765 paces. But if we draw a straight line from the same mile column to the very last of the houses, including therein the Prætorian encampment, and follow throughout the line of all the streets, the result will then be something more than 70 miles." In fact, Rome did what other cities have done: "its buildings, increasing and extending beyond all bounds," had, in the time of the great naturalist, united many other cities to it—Oriculum, Tibur, Aricia, &c. Add to the above calculation, continues Pliny, "the height of the houses, and then a person may form a fair idea of the city, and will certainly be obliged to admit that there is not a place throughout the whole world that, for size, can be compared to it."²

The portion of the surface on which the immense population existing there at the time was crowded, and far beyond it, was not, in all probability, originally favorable to health, both on account of the peculiar character of the soil, and of its exposure to the free action of the south and east winds, the effects of which were not counterbalanced by those of the northern currents, whose access was in great measure impeded by the mountainous ridges situated at the back part of the plain—which ridges were at the time covered with thick forests. From this circumstance, the temperature of ancient Rome must have been higher than that of the modern city; and this excess of heat, operating on a surface which was covered with marshy pools and stagnant water, and consisted of a volcanic

¹ Capmartin, De Chaupy, op. cit., iii. 318.

² Bk. iii. chap. ix. The city, indeed, must have been much larger than is here stated. Supposing, says an English annotator, the circuit of the city to have been, as Pliny says, $13\frac{2}{5}$ miles, he must either make a great miscalculation here, or the text must be very corrupt. The average diameter of the city would be, in such a case, about $4\frac{1}{2}$ miles, the average length of each radius drawn from the mile-column $2\frac{1}{2}$ miles, and the total amount $83\frac{1}{2}$ miles; whereas he makes it but $20\frac{3}{4}$ miles, or little better than an average of half a mile for each radius.

and imperfectly consolidated soil, could not fail, when aided by morbidiferous influences wafted from distant localities, to render it the seat of miasmatic infection.

The whole of this immense city plot, and, indeed, far beyond, was, however, in the progress of time, rendered much less hurtful by means of drains, the erection of numerous magnificent houses, gardens, aqueducts, and other works of like kind. The natural result was that the Campagna lost, to a certain extent at least, the unenviable reputation it had long enjoyed on the score of insalubrity. The sickly sections, at the period in question, were the Campus Martius, the Velabrum, and other parts bordering on the Tiber; in other words, the site of the modern city, and to the north of the ancient. These parts were low, flat, and in many spots consisted in little more than marshes, subject, in particular seasons, to overflows. At present the surface of the Campus Martius, and, indeed, the whole valley, is free from the tainted atmosphere. The very section appropriated to the Jews, the Ghetto, where the principles of public hygiene are sadly neglected, is, in a very great degree, healthy. How has this happened? The Campus Martius was purified by Leo the Xth, and the surface, after being divided into streets, was soon covered with houses, churches, and other buildings. The narrow valley lying between the Tiber and the Pincian Hill, by which we now enter Rome, was transformed from a vast marsh into the Piazza del Popolo, and other portions were, by successive pontiffs, greatly ameliorated.

The only exceptions to this freedom from fever are to be found in the Velabrum, which forms the connecting link between the old and the modern city, in the district of St. Peter, and on the surface extending from the river to the foot of the Janiculus, the latter of which seem, however, to derive their insalubrity from the miasmata exhaling from distant sources, and which reach them with facility through the agency of the south winds.

While these salutary changes have taken place in this portion of Rome and its environs, others of a diametrically opposite character have occurred in the progress of time, since the days of Horace, on the other side of it. Through the agency of the influences to which I have adverted, the site of the old city, and the larger portion of the Campagna, have returned to their pristine state. They have in reality gone to destruction, and are now deserted. The private houses and public monuments, with which they were covered, have disappeared; and the greater number of the aqueducts have been destroyed. Of the twenty-four of these which formerly existed, and through whose means abundant streams of pure water flowed into the city from distant sources, five were destroyed by the barbarians. Now but three, the Aqua Paola, the Aqua Virgine, and the Aqua Felice, remain. The effect of this destruction has been to allow the free escape of the water, and the formation of marshes and pools. The drains were, at

the same time, choked up, and the whole surface presents a mass of ruins, —a mountain of rubbish. Denuded of its trees, and, in a great measure, uncultivated and deserted, it has become, as it were, an immense focus of pestilential exhalations, which, during the season of hot days and cool nights, is freely wafted about by night and morning winds, carrying sickness and death to the inhabitants of some of the seven famous hills to the Villa Albani, to the Villa Borghesi, to the Casino Corsini, to the Villa Pamphili, and other places which surround the modern city. Unhealthfulness, indeed, is everywhere encountered. Nevertheless, some places are more severely visited, and, as we approach the inhabited parts of the present city, through the space separating St. John of Lateran from the Forum and the Velabrum, we pass over the principal focus of the pestiferous exhalations.

But while we can, if not completely, at least to a certain extent, account for the change that has taken place in regard to the salubrity of that portion of the city, and of the Campagna, over, or in the vicinity of, which Horace travelled—its comparative healthfulness then and its pestiferous character now—the same facility is not experienced in accounting for the silence of the poet relative to the unhealthiness of the Pontine Marshes, a silence which he could scarcely have observed, in a narrative like the one under consideration, had there been any reason to fear the effect of exposure to them.

I have already called your attention to the present condition of things in those localities. Every one now knows what is the almost inevitable result of such an exposure. Every one equally knows that the poison generated there extends its baneful influence far and wide, and that many a locality owes its insalubrity to the diffusion of that poison from some distant infected spot. I will not say, though perfectly aware that high and ancient authorities entertain the belief, that the exhalations issuing from the fens in question penetrate as far as Rome itself, and that to them must be attributed the fevers which annually visit some of the suburbs or adjoining districts of that city. On this subject I have elsewhere expressed my doubts, and can do but little more than repeat here what I said on that occasion.

In the first place, it may be remarked that the marshes in question are separated from Rome by a chain of hills, on the south slope of which are situated the towns of Velletri, the birthplace of Augustus, Genzano, and Albano, as also the villages of Nemi and Arricia. These several places are peopled by a robust and hardy race, little, if at all, subject to the morbid effects of the malaria. Now, to suppose that the Pontine Marshes extend their hurtful tendency as far as the plain and suburbs of Rome, we must admit also that, while such is the case, the exhalations issuing from them pass over the chain of hills referred to without injuring the inhabit-

ants of those towns and villages, though these are on their direct route, in order to exercise their hurtful effects on the entire population of localities situated at a distance of several miles from the former. In the next place, if we adopt the theory in question, we shall be called upon to explain how it comes to pass that the *Aria Cativa*, supposing it to proceed all the way from the Pontine Marshes, spares elevated spots in and about Rome to which it must have easy access, the Quirinal, for example, while it exercises a deadly action in low places, as the Villa Borghesi, situated in the same direction as, but beyond the former, and which ought, were the opinion under examination correct, to be protected by them. Add to this that in former days, as we learn from Lancisi, a thick forest, descending from the mountains of the Latium, extended as far as the mouth of the Tiber, thus presenting an obstacle to the access, in the Campagna around Rome, and in the city itself, of the winds tainted with the exhalations from the Pontine regions. And yet we cannot discover that paludal fevers were less prevalent in the localities mentioned before than they have been since the destruction of this supposed protective curtain. Again, the malaria exercises its morbid influence in the environs and suburbs of Rome, with quite or nearly the same power, whether the wind blows from the Sabine hills, and consequently passes over the plain of Rome before reaching the Pontine Marshes, or takes the contrary direction, and blows from the latter towards those hills.

The only way in which we could explain the silence of Horace, would be by supposing that in his day not only the Campagna at large, but that particular portion of it comprising the Pontine Marshes, was healthy, or at least much less unhealthy than it is now, and not sufficiently so to attract attention and deter travellers from venturing across them. That such was the case in very early times, has been inferred from the fact that the region last mentioned appears to have been then densely populous, and we are aware that density of population, and irremediable and permanent insalubrity, are antagonistic elements. Let us bear in mind what history tells us of the condition of this region at the period of the foundation of Rome, and we shall, as already stated, form some idea of the probable extent of this population. We know also that Camillus fixed his camp upon this plain in the war with the Aurunci. Would he have done so, had the place been remarkable for insalubrity?

As a further evidence of the great extent to which the population of the region in question had attained, I may refer to the fact, for the knowledge of which we are indebted to Pliny, who cites it with apparent confidence in its truth; that in ancient times—before the siege of Troy—the Pontine basin and the slopes of its encircling hills, were studded over with not less than twenty-three towns or cities of greater or less extent. Some authorities maintain, indeed, that the number exceeded thirty. Among

these places several, as Suessa, Pometia, Longula, Polusea, Mugilla, Ninfa, very probably stood on spots which at the present day are justly regarded as perfectly uninhabitable. A modern writer, of considerable weight in matters of this kind, Mr. Prony,¹ who surveyed, in an official capacity, the region under consideration during the French occupation of Rome, and whose work on the Pontine Marshes is justly regarded as among the very best we possess, remarks that there is every reason to believe that at the remote period above mentioned, the soil was highly cultivated and in a flourishing condition, either in consequence of a continuous application of a well devised system of labor, extended over every portion of a territory, on which was spread a large and industrious population; or from the circumstance that the causes of obstruction to the flow of the water were not then as powerful as they have since become. Let it be remembered that this population, interested as it was in preserving, in a healthful condition, the surface of country it inhabited, and in preventing any diminution of its agricultural resources, could not but be ever ready to guard against or remedy any occurrence or change calculated to produce those effects. Let it be borne in mind, too, that the sandy downs along the sea did not constitute then the almost insurmountable obstacle to the drainage of the soil they now prove to be; that aquatic plants, the growth of which is nowhere more extraordinarily rapid than in this region, and which tend powerfully to choke up all its running streams, and cover the moist portion of the soil, were carefully and successfully destroyed, and that the absence of relationship existing between the quantity of water furnished to this region by means of frequent and heavy rains, and by the many streams I have enumerated, and the means of discharge into the sea, could not have been so marked in former days, as at present. Nor must we forget that the fires occurring by accident or produced by design, and sometimes resulting from the action of lightning, which destroy, in times of drought especially, large portions of woods or of a stratum of half decomposed vegetable detritus, and give rise to depressions of several feet in depth in the soil, which become filled with water and marshy, and continue so for several years, were naturally guarded against; and that the slopes of the mountains being now less covered with soil than it was formerly, an almost complete stop has been put to the elevation of the surface by means of the alluvium carried from those slopes.

If we take all these facts into consideration, we shall find no difficulty in understanding that the loss of political independence experienced by the Volscians, and the consequent destruction and dispersion of a large portion of the population, led to the ruin of their agriculture; while in the neglect, on the part of those that remained, of the measures required to

¹ *Op. cit.*, p. 76.

guard against the deterioration of the surface, as also in the operation on a soil more than ordinarily level, and otherwise of a paludal character, of the physical causes mentioned, and others that might easily be pointed out, we find an easy explanation of the overflow of the lower section of the territory in question, and the conversion of one-fourth of its extent into an irremediable marsh, at the same time the rest, though for the most part in a state of cultivation, is naturally unhealthy and subject to accidents that render it still more so.

It cannot be denied that the tradition referred to Pliny, respecting the large number of towns and cities existing in early times in the district under consideration, has been called in question, on the ground that he cites no other authority than Macianus, an author contemporary with himself, that no trace of the fact is to be found in any of the earlier writers, and that the names of these supposed cities have not been preserved. By the same authorities it is remarked that the "*Pomptinus Ager*," which is repeatedly mentioned by Livy¹ as the place where, in times of scarcity, grain was purchased, and which was cultivated with corn, and in part portioned out in lots to Roman colonists, was probably rather the districts bordering on the marshes than the actual swampy tract itself. It is added that the very circumstance that the plain is bordered throughout by a chain of considerable and populous towns situated on the mountain front, while not one is recorded as existing in the plain, is a sufficient proof that the latter was in great measure uninhabited.

Plausible as much of this may be, I am nevertheless inclined to the opinion that, viewed in all its bearings, the objection here started is not as satisfactorily founded as those who suggested it seem to have supposed. In the first place, we may reasonably doubt the correctness of the statement that the populous parts of the Pontine Marshes were the hill slopes, and that then as now the residue of the region was in a comparatively, and in some portions in a completely, abandoned condition. The term *ager*, meaning as it does field or plain, and fields and plains not being found on mountain slopes, but on level surfaces, it must follow that in using it to designate the place whence corn was obtained under the circumstances mentioned, Livy and other writers must have had in view the level surface of the Pontine region, and not the adjoining mountain slopes, and that hence the surface in question must have been, in part at least, in a state of cultivation and densely populous. Add to this that the hilly part of the territory is well known to have produced from early times, as it produces to this day, a large amount of wine and but little corn, and we shall arrive at the same conclusion, that the latter, which was raised in such quantity as to supply Rome in times of scarcity, could not have grown

¹ Livy, lib. ii. 34; iv. 25; vi. 5, 21.

elsewhere than in the plains, which have since become too marshy to be applied to useful purposes.¹

That the statement respecting the existence in ancient times of towns and cities in the Pontine plain is destitute of proof, has not been shown. So far, indeed, from this being the case, I have named several that stood in localities at present regarded as the worst in the whole region. Some of those now existing within its precincts are of very ancient date, and there is no reason to deny that a greater number of them may have existed and disappeared so effectually in the course of time as to have passed out of the memory of the contemporaries of Pliny, and entered the domain of tradition. Independently of this, it may be mentioned, on the authority of the Abbate Nicolai, whose work, "*De Bonificamenti delle terre Pontine*," is a monument of deep and accurate research, that remarkable vestiges of extensive buildings, indicating the existence of towns, have been discovered in the region in question, and lend strong support to the statement of Pliny. Add to this that in the supposition of the Volscians having occupied only the slopes of their mountains, and no portion whatever of the plain below, it would be difficult to understand how they could have been able to provide the means of support for their large population. Livy clearly says the plain was cultivated; and whether the cities Pliny speaks of existed there or elsewhere, there is no question of the fact that Rome drew her supplies of grain from the Volscian plain, and, as Niebuhr remarks, the only plain in the territory of the Volscians is the marsh.

As late as the year of Rome 393 (358 B. C.), when the Pontine tribe was instituted, as mentioned by Livy²—nay, when, forty years later (318 B. C.), the Unfentine tribe was formed,³ we have evidence of the existence of a considerable population, which cannot, surely, be said to have occupied only the tops and slopes of the neighboring hills, and no portion of the marshy plain below.

But let us admit, for the sake of the argument, that the towns said to have existed in the Pontine district stood only on the tops or slopes of the surrounding hills, how, in the supposition of the paludal surface below being as unhealthy then as it is now, could we explain the circumstance of their inhabitants and of the population of the surrounding rural districts remaining exempt from the effect of the febrile exhalations, and continuing to thrive, as they must necessarily have done to acquire the power they are known to have wielded? We are aware that malaria, when wafted towards the slopes of hills, ascends to considerable heights. What happens now could not have failed to happen twenty centuries ago; and if we find the population of those slopes and hill-tops building numerous important towns, and therein and all around growing in wealth and

¹ Eustace, ii. 302.

² Lib. vii. 15.

³ Livy, b. ix. ch. 20.

power, and presenting all the characteristics of robust health, we may reasonably suppose that the plain below did not furnish, to any great extent, elements of mischief capable of being conveyed to those elevated localities by the current of air passing over its surface.

Let it be remembered, too, that so late as the 6th century subsequent to the foundation of Rome—about one hundred years before the time of Horace—many towns or stations of greater or less extent, and the Roman origin of which cannot be controverted, sprang up on the ruins of the Volscian cities destroyed by the second Tarquin—as Forum Appii, Tres Pontium, Tabernæ, Ad Medias. We can scarcely reconcile this circumstance with the supposition of the country being then in a sanitary condition as unfavorable as the one in which we know it to be at the present day.

Neither must we forget that about the same period, and, indeed, at a much later one, the slopes of the Volscian mountains were closely covered with the villas of wealthy Romans, who scarcely would have selected the spot had they not felt certain of enjoying there the advantages of a salubrious atmosphere. There *Pomponius Atticus*, and *Mæcenas*, and *Sejanus* had summer retreats. There, also, the *Antonia*, *Cornelia*, *Vitellia*, and *Julia* families had their villas; and, finally, Augustus possessed a house at the foot of the mountain, on a spot called *Maruti*, now the most noted focus of infection in the whole region.

Lastly, it is difficult in the supposition of the Pontine plain, in its whole extent, being in those early days the barren, marshy, boggy, and pestiferous region we now find it to be, to explain the pressing solicitations of the Romans for the partition and distribution of the land. People are not generally prone to seek the possession of land from which they can obtain no pecuniary return, and where they can meet nothing but sickness and death.

Nevertheless, while entertaining these views, it is impossible to doubt that whatever may have been the sanitary condition of the region under consideration, in the remote periods of antiquity to which I have referred, the surface very probably presented, to a certain extent at least, the character of a marsh soon after the conquest of the country by the Romans. Nor can we doubt that from the causes leading to this result, and existing from all times—the want of sufficient fall in the plane to insure an easy discharge of the water into the sea, and the tendency to the formation of sandy dunes at the mouths of the rivers—and others noted above, the greatest care on the part of the inhabitants was required to prevent the change. There is, however, good reason to believe that such a change was not sudden, but took place gradually. So long, indeed, as the district was occupied by flourishing cities, and an active and industrious population was ever ready, and were fully aware that it was to their interest, to check

successfully the stagnation of the surface water and to promote the flow of the streams to the sea, the evil could be averted. But after the ambition of Rome and her system of universal domination had rendered this tract of country somewhat desolate, this process of supervision was relaxed and finally given up, and these wastes and fens naturally increased, and in the course of time gained so much headway as to render any attempt at remedying the mischief only temporary and insufficient. Certain it is that at the time Appius Claudius commenced the construction of the great road, to which I have so often alluded, and which has commemorated his name—in the year 442 of Rome¹ (312 B. C.), the Pontine Marshes, though not having reached the unfavorable condition they have for many centuries past, but more especially since the invasion of the northern Barbarians, presented, embraced not perhaps the whole of the surface known under the name, but doubtless a considerable portion of it.

Such must have been, in some measure, the condition of this region at the time of Horace. It is true that efforts had been made at various times to correct the evil. One of the main objects of the canal constructed along the Appian Way, and, indeed, of the latter itself, was doubtless, besides facilitating travel, to afford the means of effectually reclaiming the overflowed and fenny soil, thereby increasing its productiveness in an agricultural point of view, and diminishing its insalubrity. A century after the death of Appius, during the consulate of Cornelius Cethegus, an attempt was made to accomplish more effectually the object in question. Indeed, if Livy—or rather the statement attributed to him by the author of the epitome of the lost books²—Freinshiemus—can be credited, the attempt was successful—*Pomptinæ, paludes a Cornelio Cethego consile ea Provincia evenerat siccatae, agerque ex iis factus*. However, if successful, the result obtained must have been but temporary, for we learn that at the period of the perpetual dictatorship of Julius Cæsar, plans on an extensive scale—even to the turning of the course of the Tiber, and carrying it through the Pontine Marshes to the sea at Terracina—were projected. But these plans, owing to the death of the great projector, were not carried into effect, and were forgotten.

We have the authority of Horace for the fact that some years after, works of kindred nature, or, more properly speaking, intended to attain the same end, were undertaken by Augustus, and proved effectual. How far we can credit entirely the latter part of the poet's statement in this matter, I shall not pretend to decide, inasmuch as I find nowhere else mention of entire success. But whether completely or partially successful, an attempt to reclaim the marshes may very readily be admitted to have been made; else Horace would scarcely have talked in his art of poetry

¹ Liv. ix. 29.

² Epitome, xlvi.

of the unproductive soil of that region being forced to bear the plough and maintain the neighboring cities; as well as of the river being restrained from inundation, and taught a better course, as the most glorious of that monarch's achievements:—

. . . . Sterilis—diu palus, aptaque remis,
Vicinas urbes alit, et grave sentit aratrum, &c.

In further corroboration of this an appeal may be made to the testimony of Vitruvius, who says, that “when the marshes are stagnant and have no drainage by means of rivers or drains, *as is the case with the Pontine marshes*, they become putrid and emit vapors of a heavy and pestilent nature.” Quibus autem insidentes sunt paludes, et non habent exitus profluentes, neque per flumine, neque per fossas, uti Pontinæ, Stando putrescent et humores graves et pestilentes in his locis emittunt.¹

From this it evidently follows that at the time referred to—for Vitruvius was the contemporary of Horace, and of course of Augustus to whom (not to Titus) he dedicated his work—the Pontine Marshes had “drainage by means of rivers and drains.”

But it was not until several centuries after the glories of the Augustine age had faded away, that efforts to reclaim the fenny region under consideration were made with any show of permanent success; for although Nerva, Trajan, and several of their successors directed their attention to the extension and amelioration—to say nothing of the embellishment—of the Appian Way, they do not seem to have duly appreciated the necessity of completely draining the soil over which it passed, nor done anything of importance to effect the object. We must descend to the period of Theodoric the Great, before discovering evidence of something approaching to a well devised plan for attaining the desired end, and of a serious intention to carry it out to a successful issue.

Theodoric confided the work to the Patrician Decius. Several lapidary inscriptions—one of which may be seen in the piazza of Terracina near the church—have preserved the recollection of those labors, executed at the close of the sixth and commencement of the seventh centuries, and which, supposing those inscriptions to be entitled to belief, were crowned with entire success. On the subject before us Eustace says: “The war that followed the death of this prince, the devastation of Italy, and the weakness and unsettled state of the Roman government, withdrew its attention from cultivation and left the waters of the Paludes to their natural operation. The Popes, however, when their sovereignty was established and their attention no longer distracted by the piratical visits of distant or the inroads of neighboring barbarians, turned their thoughts to the

¹ De Architectura, lib. i. ch. iv.

amelioration of the inundated territory."¹ That the statement in regard to the zeal displayed in this matter applies not to one, but to a succession of pontiffs, is shown by the fact that from the close of the thirteenth to the middle of the eighteenth century no less than eighteen Popes have attempted this grand undertaking. Among these figure conspicuously Boniface VIII., Martin V., Sixtus V., Clement XIII., and Pius VI. It is but justice to the last mentioned of these sovereigns to state that the results obtained by him in the Pontine Marshes reflect, as Eustace remarks, more lustre on his reign than the dome of the Vatican, all glorious as it is, can confer on the memory of Sextus Quintus.² A high, if not the highest, authority in these matters—Mr. Prony—while pointing out defects in the method of drainage adopted by his holiness, and showing that the success obtained was far from complete, has no hesitation in proclaiming that the latter has acquired, in the Pontine Marshes, immortal claims to the gratitude of the public; and that if the drainage of that region is effected a notable part of the glory resulting from the success will be due to that sovereign pontiff.

I may add that during the French occupation of Rome important works were projected by a scientific commission appointed for that purpose, and headed by Mr. Prony; but nothing was then or has since been done calculated to attain the object.

Whatever may have been the success of the attempts made to reclaim the fens of this region before or after the time of Horace, certain it is, as I have already stated, that at the period of his journey, the region in question was, not indeed reduced to the condition of a vast swamp, but, to a considerable extent covered with marshes, and that although the physical causes through the influence of which it has been made to assume its present state, had not, though early in course of operation, acquired their full sway, and entirely succeeded in effecting or completing the destructive changes, the results of which we now notice, they had done their work of mischief in a marked degree. A certain number of the towns and cities contained in the region had already disappeared from the operation of those causes or others we need not inquire into. Other towns soon after experienced the same fate. Pometium, or Pometia, so opulent at the time of the Volscians as to enable Tarquin to build, in whole or in part, the Capitol with its plunder, had disappeared even before the time of Pliny. Many of the former were early forgotten. The others, though familiar to Horace and his contemporaries, as Forum Appii, Tres Pontium, Tres Tabernæ, Ad Medias, have gone too, and are now scarcely better known than the others; and such as remain have dwindled down to nothing, or

¹ Eustace—*Classical Tour through Italy*, p. 292. Lond. 1817.

² *Op. citat*, p. 297.

next to it; while their few inhabitants exhibit in their countenances those striking signs of paludal intoxication and splenic intumescence to which allusion has been made in a preceding page, and which are so commonly encountered in swampy localities.

But whether or not the fenny character of the tract of country under consideration reached its culminating point after the time of Horace, and only presented itself then in a limited degree compared with what it does now, and has done for many centuries back, there is evident proofs of the fact that the locality in question was already covered with an amount of marshy soil sufficiently large, under ordinary circumstances, to generate febrile affections of the most malignant forms. If, therefore, we are to infer from the silence of the poet respecting the existence of such diseases along the Appian Way, and especially in the Pontine Marshes, among the members of the travelling party, as also among their incidental companions, and the residents of the towns or road taverns at which they stopped or near which they passed, that the country was more healthy then than we know it to be now, the difference must be due, in great measure, not to an absence at the former period of the usual sources of febrific exhalations, but to the operation of some influential agency capable of preventing the elimination of the poison, or, what is more probable, of neutralizing entirely or greatly lessening its deleterious effects.

Such a thing as complete immunity does not happen, and has never happened in any locality, the physical conditions of which are at all analogous to those of the environs of Rome. Even healthy spots in paludal regions are not always exempt. It would, indeed, be absurd to suppose that the ancient Romans, whether in or out of the city, were absolutely exempt from the effects of malaria even at the earliest period of their history, however difficult it may be, in this belief, to account for the rapid increase of the population, and the flourishing condition of the surrounding country. All we can do is to recognize either the existence in the matter of some mystery we cannot now solve, or the possession on the part of the people of that day of the art of eluding or neutralizing, in a far greater degree than their posterity are now able to do, the effect of the febrific poison. That the air of the Pontine Marshes, and even of the rest of the Campagna was not perfectly innocuous, before and during the republic or empire, we gather from the fact that on several occasions the country was visited by a greater or less amount of sickness of a kind indicating the diffusion of that poison. We hear, indeed, of the prevalence of several widespread plagues, and there is reason to believe that the disease to which most of, if not all, the accounts of these refer, was of the periodic kind so common now; but rendered more diffused and of worse character by a peculiar epidemic constitution existing at the time. The inquirer will find in Plutarch that the city of Rome suffered from pestilence

in the time of Romulus, as also in that of Numa. Two noted events of the kind are referred to by Livy and Dionysius as having taken place, the one in the reign of Servius Tullius, the other in that of Tarquinius Superbus. We learn from the former of these writers, that in the short period of 173 years—from 287 to 460 of Rome—there occurred in that city and in the surrounding country, no less than nineteen plagues; none of them at longer intervals than seventeen years, and some lasting for two or three years together. That the fever which prevailed on those occasions may, in some instances, and in some subsequent epidemic seasons, have been of a typhous and contagious character, or perhaps of the true pestilential bubonic kind, may be true; but in most of those so-called plagues, there can be no doubt that it was of the paludal class, and identical with that which now infests, and has for a long time infested, the same localities. For it must not be forgotten that in times of old, the words plague and pestilence were not used—the former especially—in the sense applied to them at present, *i. e.*, as meaning the true oriental disease. So far from this, it was extended to any epidemic disease of a widely diffused character—to any produced by morbid influences, whether permanent or occasional matters not, causing the death of a large number of individuals.

The readers of Dionysius and Solinus will recollect that the early inhabitants of Rome were constrained, at one time, to abandon the Palatine Hill, where was erected the first of the three temples dedicated to the Goddess Fever, as in other places were erected those to Mephitism and Fear. Let them bear in mind, too, the statement of Pliny respecting the complete disappearance of the population of some fifty towns or districts, the destruction of several of which was due to the ordinary causes of insalubrity. Again, let them not forget the dispersion of the two colonies of Anzii and Ostia by the effect of the sickness of the climate during the second Punic war. Mention may be made, in addition, of the reluctance of the Roman soldiers, in the year 410 of Rome, to leave Capua—where their presence had been solicited by the inhabitants to protect them against the Samnites—and return to the pestilential atmosphere of their own city. “Was it right,” they asked, “that subjects (the Capuans) should be allowed all the enjoyments of so fertile and delicious a residence; while the sovereign (the Romans) at the close of an exhausting campaign should be compelled to maintain a constant struggle against the arid and pestilential soil of the vicinity of Rome?” “An æquum esse deditotios suos illâ fertilitate atque amœnitate perfrui; se, militando fessos, in pestilenti atque arido circa urbem solo luctari.”¹ Vitruvius evidently refers to paludal fevers under the name of plague when alluding to the amelioration in the health of the inhabitants of the old city of Salapia in Apulia by the removal, by Marcus Hostilius, of the city to a more healthy spot, close to the sea, he says,

¹ Livy, lib. vii. 38.

" Marcus Hostilius cum salapium ad locum sitam quatuor milia passum ab eo Salapios transterlisset, civas illos annua peste liberavit."¹

I have mentioned the unhealthy condition of Ardea and its environs at the time of Strabo, Martial, and Seneca. The tract between Antium and Sanuvium, and extending from thence to the Pontine Marshes, is stated by Strabo² to have been unhealthy. These marshes themselves are described by Silus Italicus as pestiferous.³ Cicero, in his Republic, praises the choice of Romulus in locating his city in a healthy spot abounding in springs, even in the midst of a pestilential region—*locumque deleget et fontibus abundantum et in regione pestilenti salubrum*.⁴ The healthiness claimed for Rome, not only by Cicero in the passage just referred to, but by Martial and Camillus, must have been only comparative; for although the city may have been tolerably exempt from autumnal fevers, owing doubtless to its denser population, and, although the disease may, in great measure, have been confined to certain tracts of the surrounding country, we have facts to show that the exemption was not complete.

Fontanus extols the increasing supply of water in that city by the Emperors Nerva and Trajan, as tending to remove the causes which had previously made that city notorious for its unhealthy climate. Aselepiades found, as we are told by Cœlius Aurelianus,⁵ that in his time—the time of Pompey—quotidian, cataleptic, and lethargic fevers were dominant diseases at Rome. Don Cassius⁶ speaks of a wide-spreading plague which broke out twenty years before the Christian era, and devastated Rome and Italy generally. Horace, in a beautiful epistle addressed to Mæcenas, in excusing himself for not having fulfilled the promise he had made him to return soon to the city from the country, assigns as a reason the fear of falling sick. He feels confident that Mæcenas will give him the same liberty of absence he would do were he ill, now that he is apprehensive of becoming so, especially at a time when the appearance of the fresh figs, and the occurrence of excessive heat, cause the funeral criers to march about at all hours; when fathers and mothers are in a constant state of alarm on the score of their children; and when the obligation of paying court, or attending to business, at the palace, renders one liable to mortal fevers.

. dum fies prima calorque
Designatorem decorat lictoribus atris:
Dum pueris omnis pater et matercula pallet;
Officiosaque sedulitas et opella forensis
Adducet febres.

Tacitus, in speaking of the absence of discipline in the army of Vitellius, states that without regard to their own preservation, the soldiers did

¹ Lib. i. cap. iv.

² v. 231.

³ viii. 379.

⁴ Cic. de Repub., ii. 16.

⁵ Ac. Morb., lib. ii. cap. x.

⁶ Lib. liv.

not fear to pitch their camp in the quarter of the Vatican, reputed the most pernicious, and that in consequence they experienced a great mortality—"Postremo ne salutis quidem cura *infamibus* Vaticani locis magna pars tetendit unde crebræ in vulgus mortes."¹

Galen says hemitrites were very common, and declares that semitertians were the dominant affections during the reign of Marcus Aurelius.²

Nor must we fail to bear in mind that in a passage attributed to Pliny, but which I cannot find in his writings, the author, who, if not the great naturalist, evidently lived at no distant period from him, refers to fever as prevailing about Rome, and attributes the effect to the exhalations from the Pontine Marshes: *Ob putridus exhalationes harum paludum, ventum Syrophænicum Romæ Summopere noxium volut nonnulli.*

To the same effect Martial says—

Et quos pestifera Pontini uligent campi.

But however this may be in respect to the occasional unhealthiness of the city itself, we perceive, from what precedes, and many other facts easily collected, that the air of the surrounding or neighboring country was stigmatized as pestilential. The term is used by Columella³ in reference to the Villa of Attilius, or land cultivated by him in the first Punic war, in the quarter of Pupinia near Tusculum—*Pupiniæ pestilentis simul et exilis Agri cultorem fuisse eum (Atol. Regulum) loquuntur Historiæ.* Several others writers of the time of the republic and empire mention the insalubrity of the climate, and the wide prevalence of autumnal fevers. To this effect we have the testimony of Cato, who, in his treatise *De Re Rustica*, speaks of places where it was impossible to live, and to perform the agricultural labors of summer, on account of the pestilential nature of the air. "*Villa quæ ædificanda locatur loco Pestilenti: ubi Æstate opus fieri non potest.*" No stronger testimony on this subject could be desired than that of Varro, who advises the owner of an unhealthy farm to sell it at any rate, or abandon it; as, otherwise, he ought to be confined as a madman. These statements and advices are certainly calculated to remind us of the state of things existing at the present day in those localities, which are deserted in summer, and never visited unless their proximity to the city enables the visitor to return to Rome before nightfall.⁴

It is probable, however, that the visitations here mentioned or referred to, particularly those which occurred at a period near that at which Horace wrote, and afflicted the section of country he travelled over, may have been of a transient character and due, generally, to the overflow of the Tiber or other streams, as also to revivals of epidemic constitutions of

¹ Hist. lib. ii.

² Comm. 2 in Lib., i. Hippoc., De Morb. Popul. et in Libro de Morbo, c. viii.

³ Lib. i. cap. iv.

⁴ Lib. i. Epist. vii.

atmosphere, such as occur at times in all countries. We all know that in districts where paludal fever prevails annually to a great extent, the disease sometimes declines without any very tangible cause, and eventually disappears, leaving those districts in the enjoyment of comparative, if not complete health; while in others, which before were more or less free, the same disease makes its appearance and spreads rapidly and widely, and continues to do so, for a longer or shorter time. Such fluctuations are certainly known in Italy generally, and what is more to our purpose, in and about Rome itself.

Witness the events of 1818, when, according to Brocchi, there were admitted into the San. Spiritu Hospital alone, during the months of July, August, and September, not less than 6000 fever cases. On the 25th of July the wards contained 1130 patients. The number of admissions of fever and other medical cases during that year amounted, according to a document in my possession, to 14,881. This, with 444 cases that remained from the year before, gives a total of 15,325 cases treated. The number treated in 1817 was 14,805. From 1816 to 1825 inclusive, but omitting the two years mentioned, the number of cases treated annually varied from 11,538 to 5271, with an average of 8305.

There can be but little reason to doubt that what has occurred, and continues to occur in our day, may have, nay has, occurred in ancient times. Hence, as I have said, it is probable that in ordinary seasons the fever, if it existed at all, as we cannot but believe it must have done (for wherever paludal fevers appear occasionally or frequently in an epidemic form, it generally shows itself usually endemically or sporadically), it did so, at the time of which we have been speaking, to a moderate extent and in no way calculated to create great alarm.

Every one must be aware of the rapid increase of the early population of Rome and the neighboring towns. I have already spoken of the large number of inhabitants in Ardea and Ostia. The first census, made by Servius Tullus, the sixth king of Rome, whose death took place B. C. 534, and of Rome 210, gave, as Livy tells us (lib. i.), 84,000 citizens capable, it is supposed, of bearing arms. How such an increase could have taken place had the region been always as insalubrious as it has since become, and subject to other than temporary epidemics, I cannot well comprehend. Let it be remembered too that the Romans dedicated temples to *Fear* in connection with the prevalence of fever. This would seem to indicate that the occurrence of the sickness, which alarmed them so greatly, was occasional, not constant; for a disposition to fear was not an attribute of their character, and it is most probable that had they been living in an atmosphere constantly or annually polluted to such a degree as to create considerable and wide-spreading sickness, they would have become as

much inured to its effects as they were to every other source of danger, and have contented themselves with worshipping Esculapius and Hygeia.

We must bear in mind also that Galen, who resided long in Rome, and was, as were likewise Vitruvius, Palladius, and Varro, perfectly conversant with the morbid effects of malarial exhalations, cautions, in his *Methodus Medendi*, against the air of marshes as containing foreign substances hurtful to the organism. (xii. v.) In his *Commentaries on Hippocrates' Treatise on the Nature of Man* (Bk. ii.), he declares that several epidemic diseases are due to the influence of paludal surfaces. And yet this great writer nowhere alludes to the insalubrity of the country over which Horace journeyed, or to the Pontine Marshes, a circumstance we could scarcely consider likely to occur had the condition of things been then similar to what it is now, and has been for a long time past.

To those who have investigated the influences, terrestrial and atmospheric, under which malaria is evolved, I need not say that the subject is still involved in great obscurity; and that instances occur in which the causes of the sickness of a place or region of country, or of the exemption of other parts similarly circumstanced, or, again, of the change of the same place from sickness to healthiness, or the reverse, cannot satisfactorily be ascertained. The ways of malaria are eccentric, and, indeed, mysterious. While it is ascertained that marshy ground is the common source of the poison, experience teaches that there are many tracts of that nature where it is not evolved, or where, if it is so, it does not produce its ordinary effects; and others again where it is evolved notwithstanding the complete absence of marshes properly so called. At times we find it to arise from damp places which become healthy on becoming dry—thus exhibiting the connection as cause and effect between dampness and the evolution of the poison. In other instances the reverse occurs; sickness appears to be connected with a dry condition of the soil. Malaria appears at times to arise from clear water, where it would not be suspected; and even from ordinary grass meadows, where nothing like putrefaction exists. In a thousand instances, neither marshes nor wet woods produce it; in some cases it is the produce of peat bogs; in others it is not. In many places it is peculiar to salt marshes; in others again the occasional influx of the sea is a preventive. It sometimes appears to fall with rains and dews, as in Africa; in others it evidently rises from the ground. The driest east winds waft it from distant regions; the hot steam of the slave coasts carries it far out to sea. In some places, it is the produce of canals, ditches, ponds, and the like; in others, it is generated in dry land.¹

So far as the localities under consideration are concerned—the Pontine

¹ *Edinb. Review*, xxxvi. 551.

Marshes to some extent, but the rest of the Campagna more particularly—the only thing in relation to which no difference of opinion can be said to exist, is, that whatever may have been the cause of the change, the country is in reality less salubrious now, and has been so for centuries past, than it was in ancient times; that it is becoming less and less so, and that the area of insalubrity is enlarging every year. From what precedes I feel confident that none need fear being taxed with absurdity for admitting that the exact cause of the deterioration in question cannot be pointed out with accuracy—inasmuch as while the localities mentioned are now more subject to fevers due to malaria than formerly, and the evil is increasing, their physical aspect and topographical conditions are but little different from those they presented at the time of their more satisfactory sanitary state, or at least are not sufficiently so, to afford alone a ready explanation of the change that has been, and is now, going on. We need not inquire into the kind and degree of influence exercised by agriculture over the salubrity of the region—by the neglect of it at different times, by regulations respecting it, or by attempts at cultivation and drainage. The whole question, as far as relates to the present and former state of the Campagna considered in its totality, is one of some difficulty, about which even those who have paid the greatest attention to it are far from being agreed, and on which, therefore, I shall not venture to elaborate.

Without wishing to indorse fully the above opinion, I cannot but lend a willing ear to those who incline to the belief that the land is more productive of miasma, principally because it is less encumbered with lakes and is apparently drier. It is evident, from geological considerations, that before the foundation of Rome, its site, as well as the surrounding country, must have abounded in marshes, lakes, and woods. There existed two marshes at the very foot of the Palatine and Capitol hills—the Great and Little Velabrum. There was also the Caprean marsh and those of Terentum. That such a state of things should have produced intermittent fever, we may readily admit. But the sickness thus produced could not have been of a fatal character or extensively prevalent, inasmuch as the city increased rapidly and considerably, while the Campagna became the seat of numerous villages. By those who entertain the view in question it is remarked, that the pools, or lakes, or marshes of the Rutulians and Volscians, of the thirty-one Rustic classes and of the Velabra, might easily, for aught we can prove to the contrary, by any reasoning or experience, have been more salubrious, or rather less injurious than the same land in its present state, when those cavities which were formerly covered with a protective sheet of water, having been filled up by the gradual increase of their subaqueous soil, or partially drained, it retains beneath the surface that water which was once exposed to view, or when, in other places the sheet of

water by which the soil was covered, being evaporated or otherwise removed, the paludal surface has become exposed to the action of the sun, and, as a natural consequence, evolves a larger amount and a more virulent kind, of febrile poison.

But while entertaining these opinions, I am far from wishing to be understood as believing that no causes other than those mentioned can be assigned to the effect in question. Indeed I have already stated that such probably was not the case. It is possible, as has been remarked elsewhere, that the observations of the writers referred to respecting the insalubrity of Rome and the Campagna, did not apply only to particular spots or temporary outbreaks of disease, that the country had always been more or less unhealthy, and that if the prevalence of sickness was more noticed in latter than in early times, the circumstance is due to the fact that writers were then more numerous; that the people were more enlightened; and that subjects connected with economy and health were objects of greater attention to a luxurious people, enjoying leisure, wealth, and knowledge, than to their barbarous predecessors, who were constantly occupied in war, and little concerned about anything but the recruiting of their armies, and the annoyance of all independent states which they could anywhere reach.¹ Nor can it be less worthy of consideration, as remarked by the same writer, whether there were not circumstances in the political condition of ancient Rome, which rendered the effects of the malaria less objects of attention, even independently of the causes to which we have just referred, and of a nature to preserve a crowded population in the town, and a busy and numerous one in the country, in spite of a certain portion of disease.

Equally far am I from supposing that the change in the Pontine Marshes and in the rest of the Campagna, in respect to population—the destruction or extraordinary reduction of their towns, and the almost complete desertion of the surrounding country—is attributable exclusively and everywhere to the gradual increase of the malaria; in other words, that had it not been for the evolution and wide-spread prevalence of this poison such an occurrence would probably have not been noticed. That such was the case in some of the localities mentioned—to a great extent at least—may be, and I am inclined to think, is, true; for it is easy to conceive that where insalubrity increases—where sickness of a dangerous character is widely spread—there population will, as a general rule, be apt to decrease or, at best, to remain stationary; for few will feel disposed to settle in such a locality, and replenish the ranks of its wasting population. But the same does not hold good everywhere, and in many places it is found that whatever blighting influence the evolved malaria may exercise on those

¹ Edinb. Rev., xxxvi. 549.

exposed to it, it is itself the result, not the cause, of the diminished number of the inhabitants—or, more correctly speaking, of the modifications occurring in the soil consequent on such a change. I have already remarked that density of population and irremediable and permanent insalubrity are antagonistic elements. Where we find the latter we may be certain that the former does not exist. Equally certain is it that density of population may act, and has acted, as a cause of health—so far at least as the prevalence of diseases of a paludal character is concerned. This result is specially notable where the localities under observation contain naturally the elements of insalubrity, and where the physical agencies tending, if left undisturbed, to occasion changes in the condition of the soil calculated to bring those elements into play, have a proclivity to encroach.

There an increase of population will tend, by various means, to improve and preserve the health of the place—in general, indeed, sickness vanishes before it—and when such happens not to be the case, we may be certain that the morbid agent is evolved at a greater or less distance, and is wafted to the sickly place by the wind. As countries become settled—and the effect is proportioned to the completeness of the settlement—malarial fevers diminish. In cities—our own for example, and the larger ones more particularly—remittent and intermittent fevers, when they show themselves, are mostly restricted to the suburbs, in other words, to the less settled and inhabited sections. As the buildings extend, and the closely peopled portions expand, and by so doing, lessen the area of humid and exposed soil, the disease recedes. So in the open country, the first settling and opening of the soil are usually followed by sickness. Intermittents and mild remittents are apt to give way to bilious and malignant remittents and destructive epidemics. But after some years of cultivation, sun exposure and drainage, general salubrity follows. Such results are recorded in the medical histories of our country, of England, France, Switzerland, and other sections of Europe, as also of South America, and the West and East Indies.

It must be remembered also that malaria, in some instances, extends without any ostensible cause, and affects more or less severely populations which had been for some time before, or even always, completely, or to a great extent, exempt. Cases of the kind are familiar to every one in this and other countries. In illustration, I might call attention to the rapid progress which the malaria is now annually making through the city of Rome; for it is but too certain that it is spreading in the way mentioned, and every year reaches parts where it was before unknown.

In all places under the circumstances mentioned above, a great diminution of population will cause a revival of malaria, and this in turn may drive away what remains of the population to such an extent as to convert those places into deserts. Such was the case in the Pontine Marshes and

in the rest of the Latium. Whatever may have been its condition in point of health in its pristine state, it became in the course of time very populous, highly cultivated, and otherwise improved in many parts. By this enlarged population the elements of insalubrity, if existing originally, were kept in abeyance or destroyed by a careful and uninterrupted removal of some, and the prevention of other, of the causes of paludal exhalations—by preventing the overflow of streams, by the drainage of marshes, by promoting the free flow of water, &c. By these, and other kindred means, aided by a careful cultivation of the soil, the aspect of the country in a sanitary point of view was changed. Sickness, more or less diffused, more or less severe, was replaced by comparative, if not complete health, and this continued so long as the means of preservation were left undisturbed.

We have seen, in the course of the preceding pages, the circumstances which brought about the destruction of the towns of the Pontine region and of the Latium generally, as also of ancient Rome itself. By these, the population was destroyed or dispersed, while by the changes occasioned in the condition of the surface of the country the elements of insalubrity were brought into play, and sickness succeeded to health. Malaria has become the scourge of the whole region, and the unhealthiness thus created or greatly increased has driven away the greater part of what remained of the population, and deterred others from filling, especially in a permanent manner, vacancies thus occasioned. To these events, therefore—to the devastation of war, and to other baneful influences of kindred character, as also to misrule and its accumulating consequences—we must look for the powerful causes of the depopulation of the region in question, and of the increased evolution and destructive effect of the malaria. In other words, promoted originally by depopulation and desertion, and the local changes and the peculiar state of atmosphere resulting therefrom, malaria has become in its turn the promoter of further depopulation and desertion, and it needs no prophet to teach us that unless resisted in its progress it must necessarily gain ground in an accelerating ratio as the inhabitants retire before it.

The great accumulation of the population in Rome itself, says a late writer, must have operated as a powerful check; for even at the present day, malaria is unknown in the densely populated parts of the city, though these are the lowest in point of position, while the hills, which were then thickly peopled, but are now almost uninhabited, are all subject to its ravages. In like manner, in the Campagna, wherever a considerable nucleus of population was once formed, with a certain extent of cultivation around it, the mischief was in a great degree kept down; and it is probable that even in the most flourishing times of the Roman empire, this evil was considerably greater than it had been in the earlier ages, when the nume-

rous free cities constituted so many centres of population and agricultural industry. It is in accordance with this view that we find the malaria extending its ravages with frightful rapidity after the fall of the Roman empire and the devastation of the Campagna. A writer of the eleventh century speaks of the deadly climate of Rome in terms which, at the present day, would appear greatly exaggerated.—(*Petrius Damianus, cited by Brunsen.*) The result has not been limited to the Roman territory. Everywhere sickness succeeds to devastation, depopulation, misrule; and it is safe to affirm that the current of disease which now afflicts countries so circumstanced would not exist, or if existing would not be felt, were they in a different condition. It has been said that were Egypt what it once was, in government, commerce, arts and industry, all the plagues to which it is subject would make no sensible impression on the population. It is not from fevers and dysenteries that Northern Africa is cursed, and Carthage a desert, or that Palestine is reduced to one-sixth and less of its population. There misrule, and its accumulating consequences will account for these, and far greater revolutions. But it is not less certain, from the details referred to, that the insalubrity of the Campagna, and of the Pontine Marshes particularly, is far greater than it was before, or at, the time of Horace, and that we have reason to suppose, as already stated, that the causes mentioned would not have been sufficient to produce the decay of the country, to the extent this has attained, had they not been most powerfully aided by some local or atmospheric agency affecting the health and abridging the life of human beings permanently exposed to its operation, and eminently calculated to deter the settlement there of individuals aware of its prevalence and deleterious effects.

Be all this as it may, however, there can be no reason to doubt the occurrence of the change in question. May we, with some of our contemporaries, attribute it, to a great degree, at least, to modifications introduced subsequently to the time referred to, in the mode of dress and in the ordinary habits of the Romans? The question has been particularly discussed by Brocchi, who, in a work of merit and reputation,¹ refers the preservative effect to the universal use made, in early times, of woollen cloth or flannel, which was worn next to the skin. In support of this belief he appeals to the circumstance that the period at which fevers began to prevail extensively and annually, corresponds to that at which the citizens, having become wealthy and luxurious, abandoned their antique simplicity of manners and austere habits of life, and casting aside their old togas, gave way to silk and linen. Brocchi further believes that the beneficial influence exercised by the material in question was increased by

¹ Dello Stato Fisico del Suolo di Roma. Memoria per servire d'illustrazione alla carta geognostica di questa città, p. 215, &c. Roma, 1820.

the fact that from the imperfect manner in which the wool was prepared, it continued to contain a large portion, if not the whole of its oily elements, which have a remedial or prophylactic virtue. In addition, he believes that the shape or make of the dress exercised an effect of kindred nature, and that the whole was aided by the practice, so common at the time, of resorting to general frictions, either simple and dry, or oily, after washing the surface of the entire body, or bathing, as well as by a constant resort to all the means calculated to strengthen the body and lessen its susceptibility to the action of morbid influences.

I shall not occupy the little space I can yet spare in examining critically how far this theory is entitled to consideration, and can aid in solving the question before us. I cannot dismiss it, however, without remarking that though willing to admit that woollen clothing, especially when worn next to the body, acts advantageously, by keeping the skin in a gentle state of excitement and in a perspirable condition, and by promoting the absorption of the fluid thus secreted, and otherwise aiding in causing the healthful performance of the functions of that organ, and thereby enabling the system to resist the baneful influences of malarial and other morbid causes, as also protecting it against the inroad of predisposing and exciting causes; I am far from supposing that its prophylactic agency can, under any circumstances, prove as powerful and effectual as Brocchi imagines. Such a result has not been noticed anywhere and at no time, and could scarcely have occurred in Rome and the Campagna. The author has been unfortunate in the selection of the facts and arguments he adduces in its support. In the first place, we all know, as mentioned by an intelligent reviewer, that the use of silk and linen began to be remarked towards the decline of the republic. This we may see in Cicero's declamation against Catiline, where the great orator satirically denounces men who appeared, on even taking their seats in the senate, shining in their purple, and acting the part of conspirators while decked off with garlands, and daubed with perfumes. Under Tiberius, silk was still more frequently used, and the ladies, always foremost in new fashions, concealed their beauties with gauze so thin as to be called *ventus textilis*. But the use of such clothing was a luxury limited, not only to Rome itself, but to the upper classes of society in that metropolis. Now it is probable, though Brocchi asserts the contrary, that the fever prevailed less frequently and severely among that class than among the rest of the population who had not abandoned the use of the old woollen toga. It is the lower and middle classes that are, everywhere, the greater sufferers from paludal fevers. Had the change been found to be the cause of the greater prevalence of the disease, Martial would not have praised the new dress, and Horace would not have thought the wearing of the old absurd. Nor would they all have been in the habit, at their country seats, to strip

themselves of their doublet and hose. A writer already quoted, pertinently says he would desire Brocchi to recollect that the ancient Egyptians, and many of their neighbors, wore linen; that, from time out of mind, the Hindoos and Chinese have clothed themselves in cotton, and the negroes often in nothing at all, without being from that cause particular sufferers from the peculiar and virulent malarías of their own regions. "A greasy Russian boor claims no particular exemption from the agues of the Don and the Crimea."

In order to be able to refer to woollen clothing, the prophylactic influence contended for, Brocchi is obliged to maintain that the paludal poison finds entrance into the system through the pores of the skin, and not through the lungs. This opinion, he thinks, receives support from the admitted fact that the diseases which this poison produces are more readily excited during sleep. He remarks that, inasmuch as sleeping and waking the lungs exercise alike their functions, they cannot be the instruments of the introduction, since in that case the latter effect would be produced as well during the one state as during the other. On the other hand, he asserts on the authority of Richerand, that the absorbents of the skin are most active in the state of sleep, and hence concludes that the poison must be admitted through the skin and not through the lungs. I cheerfully unite in opinion with those who think that the authority of Richerand in matters of the kind, and the value of this reasoning, based as the latter is in part upon that authority, and on assertions of more than doubtful correctness, deserve pretty nearly the same degree of respect.

To confirm this hypothesis, the learned Roman refers to a phenomenon which he tells us "*ha sempre distata la maraviglia dei fisici*," *i. e.*, that no animals, either tame or wild, suffer from the effects of malaria; and that travellers are greatly surprised to find them living and thriving in the most poisonous situations. The cause of the exemption, however, is, as he thinks, in the wool and hair with which nature, more kind to them than to us, has provided them. Unfortunately for this part of the theory, the exemption has no existence in fact; for the lower animals—and the most woolly ones too—are not unfrequently affected by malarial exhalations. But even were this not the case, it would be no easier in M. Brocchi to explain the exemption in question in this or any other way, "than to inform us why cows are not subject to the gout, nor geese to hysteria—why herrings are exempt from the smallpox, and oysters from the toothache."

Instances of a considerable deterioration in the sanitary condition of tracts of country of greater or less extent are, as we all know, not limited to the district of country over which Horace journeyed. They are not unfrequently encountered in other parts of the Roman territories, and in distant regions.

In this respect, our country would seem to form an exception; for although the first effect of opening and clearing a virgin soil is to promote the extrication of febrile exhalations, time and cultivation soon remedy the evil. The tendency everywhere seems to be towards amelioration, and I can scarcely recall to mind more than a few localities which, after having long enjoyed a healthful atmosphere, has become the permanent seat of febrile complaints of a paludal character. In other countries matters have, from a variety of influential agencies, often taken a different turn. I might refer for instances of the kind to Greece, or Egypt, the Morea, Asia Minor, portions of Arabia, Albania, Magna Græcia, and other parts of the Neapolitan territories. But I have room for only a few which I select, in preference from Western and Southern Europe. Let any one sleep in open air, and especially after nightfall, in the Phlegrean fields of Puozzoli and Baia, which formerly were covered with temples, palaces, sacred woods, and where Virgil placed the Elysium, and fever will certainly be the consequence. Ardea and Ostia may be referred to as illustrative of the change under consideration. The former—the city of the Rutulians—was able to raise an army of sufficient magnitude to enable her to resist Rome, and, at the same time, to send a colony to Saguntum. At the time of Strabo, the territory around was marshy and unwholesome (v. 231). The latter condition of the place is noticed by Martial (iv. 60) and Seneca (Ep. 105) as something proverbial. From that period it has gradually dwindled away in point of population and importance, and now reckons only 600 inhabitants. We know that Ostia, built by Ancus Martius, fourth king of Rome, 640 B. C., became in a short time a flourishing city. It was too small for the number of its inhabitants, and cut no mean figure among the magnificent cities of Latium. At present it contains only a priest, a tavern-keeper, four or five soldiers, and a few families that do not venture to reside in it all the year round. Pratica, which stands on the spot once occupied by Lavinium, is a miserable castle, from which the pastor emigrates to return only on festival days. The ancient Lavinum stood near a spot which is at the present day among the most destructive; and the Romans built baths beyond the Anio, where no one will now venture to travel. The lake of Castiglione, most infamous for its pestilential air, was in the time of Tarquinius Superbus the seat of a powerful city that long resisted his arms. The Lago di Guiturme, once a favorite spot of the ancients, was drained in 1611 by Paul V., on account of the exhalations, which rendered Castel Gondolfo uninhabitable.

Under the rule of the Etruscans and during the height of Roman civilization, the Tuscan maremme were wealthy and populous, and contained important cities, the Cyclopean remains of which may still be seen. During the Middle Ages—a period of division, ignorance, and war—the

country was laid bare by the destruction of immense forests; the streams by which it was intersected were no longer maintained within their banks, and were thereby allowed to overflow far and wide; the torrents from the Apennines rolled immense bodies of earth which closed the gulfs situated at their mouths, and caused the formation of lagunes of stagnant water. Desolation, sickness and death have succeeded as a natural consequence of the change; and now, notwithstanding the efforts that have been made by successive governments to remedy the evil, the region in question enjoys an unenviable reputation in point of salubrity.

The plain of Pæstum, between the last hills of the Abruzzi and the sea, was once rich on the score of population, and rejoiced in being the residence of the Sybarrites. It justly merited the appellation of "the field of roses" which it had received from the poets. It is now uncultivated, despoiled of trees, and completely deserted. The same character of insalubrity noticed in the Etruscan maremme, has caused the dispersion of its inhabitants. The ruins of a few dwellings, the crumbling walls, and the skeleton of three temples alone remain to attest the ancient grandeur of the celebrated city. Again, the central plateau of Sicily—the abundant granary of the ancients, the possession of which proved the cause of the Punic wars—has experienced a similar change. In travelling over the country we discover no means of shelter from the rays of the burning sun, all the trees having disappeared. The soil is uncultivated, bare, and deserted, and the few inhabitants that remain present the peculiar aspect of countenance characterizing the paludal cachexia.

Virgil sings of the emptiness of the city of Acerræ, whose population had been thinned by the sluggish course of the river Clanus—

Et vacuis Clanus non æquus Acerris.¹

Vitruvius tells us that marshes when situated on the seashore may prove innocuous, provided they are higher than the sea, so that the water in them may easily be discharged into the latter. Hence, he remarks, the vicinity of marshes has not rendered Aquilia, Altena, or Ravenna unhealthy; and yet Lancisi, who wrote in the commencement of the last century, tells us that the first of those cities, in ancient times so flourishing, so populous, so renowned "as to merit its advancement first to a metropolitan and then to a patriarchal dignity," had been almost destroyed, scarcely retaining, in his days, any traces of its former splendor—an effect which, he says, was ascribable only to the pernicious exhalations arising from its undrained soil. *Vix nostro ævo reliquias ædium et veteris fortunæ vestigia retinet, nullis aliis armis eversa quàm corruento ex aquis hærentibus aëre.*²

The same writer continues: "The city of Brundisium, formerly so famous,

¹ Georg. ii. 45.

² De Nox. Palud. Effl. L. i. p. i. c. iii. p. 8.

is lamentably mentioned by Antonius Galatheus in words which, by reason of their aptness, we quote. Moreover, cities situated in a healthy climate have been destroyed. Cities, indeed, like men, have their vicissitudes. But the neglect of its inhabitants has been the ruin of Brundisium; for had an outlet been made for its waters, it would never have acquired such an unhappy distinction."

So many other cities and villages have suffered the same fate, that it would be tedious to describe their funeral decline.¹

Lancisi further informs us that, in his time, the marshes existing in Italy were much more extensive than they had been in former ages, so that cities which anciently enjoyed considerable celebrity had disappeared in the water. "*Nos autem in eo agimus seculo, in quo enormiter auctæ sunt paludes, et consque excreverunt, ut celeberrimæ quondam urbes primum innatantibus aquis obrutæ, dein longâ oblivione sepultæ, vix ac nê vix quidem nomen servaverint posteris memorandum.*"²

In France I may cite the Camargue—that immense delta of the Rhone, which, at the time of the Roman Empire, and the early races of the French kings, contained an immense population, and was studded with cities, castles, and monasteries. It has now dwindled down from its state of prosperity to the condition of a barren, bare, deserted, and marshy surface, the insalubrity of which has passed almost into a proverb. The whole of the Mediterranean coast of France, as also the Dombes, the Bresse, the Sologne, and a portion of the Forez, have undergone kindred changes. Once populous and enjoying a large share of salubrity, they have, in the progress of time, become deserted of their inhabitants, and the almost constant seat of febrile manifestations.

A few pages more, to call your attention to one or two questions of a medical character, suggested by some incidental statements made by Horace in the course of his narrative, and I shall close this long discourse.

The poet, as we have seen, was laboring at the time of his journey under an affection of his eyes; for you will recollect that he tells us that at Terracina he was obliged to make use of a collyrium, and at Capua he refrained from playing at tennis on the plea that the game was hurtful to tender eyes—namque pila lippis inimicum. Nor must we forget that at Trivicum he was much incommoded by the smoke arising from the burning of moist branches mixed with green leaves—*lacrymosa non sine fumo, udos cum foliis ramos urente camino.*

The indisposition in question was nothing new to Horace. Endowed in a high degree with all the attributes of the lymphatic temperament, doubtless associated with a preponderance of the sanguine—a peculiarity

¹ De Nox. Palud. Effl. L. i. p. i. c. iii. p. 9.

² De Sylvâ cisternæ et serminetæ non nisi per partes excidenda, § xxi. p. 100.

which, while accounting, aided especially as it was by the luxurious mode of life he doubtless had led, for the vivacity of his passions, the liveliness of his disposition, the charms of his conversation, and the amiability of his humor, rendered him subject to ophthalmic and kindred complaints he appears to have long suffered in the way mentioned. Experiencing considerable annoyance from the disease, he not unfrequently refers more or less pointedly to its effects. In his first satire, addressed to Mæcenas, he playfully alludes to the lippus of Crispinus, applying to this individual as a sobriquet or distinctive appellation, the name of the complaint under which he labored. “Jam satis est: ne me Crispini, serinia lippi compillasse putes verbum non amplius addam”—a charming epigram, the form of which has been happily imitated by Boileau. In his subsequent writings, too, we find that the sufferers from the complaint—the lippi—are frequently objects of his jests. The subject appears, indeed, to have been uppermost in his mind.

Of the precise nature of the disease we gather but little from the writings of his commentators. But there can scarcely be any doubt, from the word he uses to designate it in his own case, and in that of Crispinus, that the complaint did not involve the ball of the eye, but was located in the lids, and was of a suppurative or glutinous character. In other words, there is every reason to believe that the term *lippus*, as used by Horace, was synonymous with, and designated the same disease as, *lippitudine*, which is employed by Celsus and other old writers. By it was understood the glutinous inflammation of the palpebral glands—the lippitudo of most writers, the blepharitis of some, the bleared eyes of the Anglo-Americans at large, the chassie of the French. It is more than probable that the disease under which Horace labored recurred at intervals, or, if otherwise, at no time assumed a chronic, formidable character, and produced those changes about the eyes—falling of the eyelashes, &c.—which so greatly tend to disfigure the sufferer. Else would he have been so ever ready to jest about it? Very different must have been the case with Crispinus, Rupelus, Rex or Persius, the antagonists of the latter in the ridiculous contest he has immortalized.¹

Somewhat more difficult to solve is the question of the nature and composition of the black collyrium, which, as Horace informs us, he resorted to at Terracina. None of the substances mentioned in our formularies are calculated to impart a black color to eye salves, for such in all probability was the form in which the preparation used was prepared, inasmuch as the ancient Romans used empirically under the generic name of collyria, an infinite variety of compounds or substances destined for various parts of the body, and those applied to the eyes were usually if not always

¹ Epist. Lib. I. i. 29; Sat. Lib. I. i. 120; ib. vii. 2 and 3; ib. iii. 25.

salves, and not collyria in the modern acceptation of the term. It may be remarked in this connection, that they do not seem to have cared for the pain which their remedies inflicted, or ancient eyes must have been remarkably tolerant in that respect. We find among the articles used, pepper, capsicum, opium, cinnamon, gall-nuts, scuttle-fish shell, pumice stone, gum ammoniac, hartshorn, myrrh, frankincense, saffron, aloes, calcined, or scales of, copper, vitriol, oxide of zinc, guaiacum and other gums, many of which modern patients would be loath to submit to without considerable demur.

By some writers it is supposed that the collyrium, or rather salve in question, was that known in ancient times under the name of black phœnix, and resorted to in the treatment of cicatrices of the cornea, of granular inflammation of the lids, of amblyopia, or weakness of sight, and of pteridium. An account of the composition of this salve is found in the third section (or sermon) of Ætius's *Tetrabibli—De Morbis Oculorum*. It consisted of sepia or scuttle-fish shell, pumice stone, scales of copper, gum ammoniac, copper rusts, hartshorn, of each one pound; of myrrh, frankincense, and honey, of each one-sixth of a pound; of opium, one-fourth; gum, two-thirds, and charred date stones one-tenth of a pound; the whole mixed with water. "The Africans," Ætius continues, "used to prepare this, and had great confidence in it. They called it black phœnix, because it contained one-tenth part of date stones charred, the date being the fruit of a palm-tree, which is called (by the Greeks) phœnix."

Another salve, which in like manner was denominated Black, and was supposed to strengthen greatly the sight, contained a portion of black oxide of antimony. The salve of Sophronius contained calcined hartshorn, and was probably rendered black by the admixture. Finally, in the Sixth Book of Celsus (Sect. 5), we find a passage which is applicable to our present purpose, and will, I think, enable us to solve the problem. After giving the composition of several salves in repute for the treatment of lippitudo—the very disease under which, as we have seen, Horace labored, Celsus says: "There is also the Attalian for the same complaint, and particularly in cases attended with an excessive discharge of pituita: Of castor ῥss ; aloes gr. xv; saffron ῥj ; myrrh ῥij ; lyceum ῥiij ; prepared cadmia ῥj , with a like quantity of antimony and acacia juice ῥiss . That which does not contain gum is kept in a small box. Theodotus added to this compound toasted poppy tears ῥj ; copper, calcined and washed ῥj ; twenty charred date kernels and ῥiss of gum." To this preparation, which scarcely less than the black phœnix mentioned by Ætius, may be viewed as no mean rival, in regard to the number of its ingredients, of the Venetian Thebiaca of a later period, a black color was doubtless imparted, as was also to the other, by the charred date kernels added to its various ingredients. Either of those black preparations may have been that

employed by Horace. It appears to me, however, more natural to suppose that he resorted to the latter, *i. e.*, the one described by Celsus as modified by Theodotus; as, it was invented and prescribed by a physician in high repute at Rome, and who, if I am not mistaken, flourished about his time.¹

Horace could not reach the centre of the Pontine Marshes without encountering a stream of gaseous water, strongly impregnated with sulphur, the "aqua puzza," or "stinking water," which, arising on the height of Sermoneta, 940 feet above the level of the sea, and of Satium (Sezza), empties into the Cavatella, one of the rivers which contribute most to the inundation of the plain, and falls perpendicularly on the axis of the Appian Way. The stream in question, which, like others in the vicinity of Rome, deposits a large amount of concretions, which cover the shores or the surface of the water, and by spreading in times of overflow over the surrounding plain, covers the soil with a hard crust, indicates its presence by the emission of a strong odor of sulphur. From this circumstance the stream has derived the name of Fiume Coperto.² Nevertheless, this stream does not seem to have attracted the attention of Horace; or if observed by him as he travelled along, was not regarded as possessing sufficient interest to merit special notice; for he makes no mention of it.

This silence on the part of the narrator, in relation to a peculiarity which so forcibly impresses itself to the notice of all travellers on the Appian Way, has formed the subject of comment. By some the circumstance has been ascribed to the peculiar tendency of Horace's mind, and of the inspirations of his genius, which inclined him towards the study of man and the follies of his times, rather than towards topographical researches or the laws of statistics. Others have thought that it may have arisen from a neglect on the part of the Romans of that day, of the therapeutical agency of mineral and thermal waters—a circumstance which would induce a traveller like Horace to pass by unheeded a small stream of water noted for nothing but a disagreeable odor, and whose medicinal properties he did not suspect, or to which he attached no importance.

To me the silence of Horace on this subject appears to be attributable to the fact that it was impossible for him—nay, that it would have been improper—to touch on all the peculiarities of locality he chanced to notice on the road along which he travelled. To have dwelt on one and

¹ It may be proper to remark that oculists were very numerous at Rome, and the greater number of them possessed seals engraved on stone, on which was stated the name of a particular remedy, and of its owner or inventor. Many of these seals indicate only a single property of the remedy, as perfumed, delicate, &c.

² Prony, *op. cit.* 74, sect. 1, Chap. I.; 153, sect. 2, Chap. III.

passed all others by in silence would not have been consistent; and to have noticed everything worthy of attention, would have entailed an extension perfectly incompatible with the character of his work. Besides the sulphureous and wide-spread odor of the aqua puzza and its attached or floating concretions, were things too well known to Horace and his readers to fix his attention in a special manner, or induce him to mention them in his brief narrative. The odor and concretions in question were not observable only in the locality mentioned, where they could not have failed to be observed by Horace, to whom the Appian Way was doubtless familiar. They are also found, and in a much more marked degree, along the road leading from Rome to Tivoli, where we know he frequently went, and in the vicinity of which is located the far famed Solfatara—the starting point of the Aqua Albula, presently to be noticed.

Nor can we conclude that the silence of Horace arose from a want of appreciation on his part, of the medicinal properties of mineral springs, and of the important part they often play, or are capable of playing, in the treatment of various diseases. The Roman soil is rich in such springs, especially those of the sulphureous kind; and it is a matter of no little astonishment to professional readers, to discover what an insignificant position such springs or mineral waters generally occupy in the list of therapeutic agents employed by the Roman physicians of our days.

But because such is the case now, it does not follow that the remark is applicable to times long passed by. I am not prepared to admit that the practice of resorting to such agents originated at the very remote time contended for by some, and especially that it can be traced to the earliest historic periods. Nevertheless it cannot be overlooked in an inquiry into this matter, that early and widely spread traditions recorded by Herodotus, Strabo, Diodorus Siculus, Athenæus and others, would seem to lend support to that view of the subject; teaching us as they do that thermal springs were in very ancient times dedicated to Hercules, and therefore must already have been in repute. It is plain also from the name given by Herodotus to the hot springs of the Thermopyæ—*λοετρα*—that in his days, they were used in the form of baths. For this and other reasons, we may attach but little weight to the fact, to which attention has been called so early as the days of Pliny (xxxii.), that Homer says nothing, in either of his two poems, of mineral springs. In the first place the statement is not strictly correct. Pliny, when he made it, forgot that Homer in the 22d book of the *Iliad* (l. 147 et seq.) speaks of the warm springs of the Scamander.¹ In the second place, were the statements true we could

¹ It is proper to remark that in calling attention to this hot spring or fountain, which "through scorching clefts is seen to rise, with exhalations steaming to the skies," Homer makes no reference to its medicinal virtues, or to its application

not infer from his silence that such springs were not known and employed at the period at which he lived, or at which the events he records are supposed to have occurred. Nevertheless, admitting said waters to have been thus early resorted to, we cannot greatly err in concluding with Mr. Darenberg, that they rather belonged to the class of popular than to that of regular remedies; or in other words, to that class resorted to by the public at large, and in an empirical manner, and not to that employed on scientific principles by medical men. Thus, the remarks of Hippocrates about these agents are obscure, and do not indicate a high appreciation, on his part, of their usefulness in the treatment of disease. So far from this, in his well known treatise on air, waters, and places (§7, B. 2), he regards them as injurious to health. After stating that such waters as are marshy, stagnant, and belong to lakes, are unwholesome, he says: "The next to them in badness are those which have their fountains in rocks, so that they must necessarily be hard or come from a soil which produces thermal waters, such as those having iron, copper, silver, gold, sulphur, alum, bitumen, or nitre (soda) in them; for all these are formed by the force of heat."¹ In another work he speaks of salt baths as possessing the property of attracting humidity out of the body, in consequence of being heating and dry.² But the remark applies equally well whether the water used be sea water, or water rendered salt by artificial means, or again, water derived from saline mineral sources. I am aware that in opposition to the opinion just announced, it may be mentioned that Hippocrates refers in this fifth book of the epidemics,³ to a case of regular treatment

to medical purposes. He represents the "marble basin," in which the water was received, as a place "where the wives and fair daughters of the Trojans formerly, in peace time, used, before the sons of the Archeans arrived, to wash their beautiful robes." From the use thus made of the water, we may presume it was merely hot, and not impregnated with saline or other medicinal substances. Homer, at the same time, mentions a spring of cold water, which "the green bank in summer's heat overflows, like crystal clear and cold as winter snows."

Strabo finds fault with Homer, for saying that the water of one of these sources was hot; whereas according to his observations there is but one spring, and that cold. Neither is it, according to this same writer, in the place assigned it by Homer, but in the mountains. Pope, after referring to the opinion expressed by Eustathius, that though this was not true in Strabo's time, yet it might have been in Homer's, greater changes having happened in less time than that which passed between these two authors, adds that Sandys, who was both a geographer and critic of great accuracy, as well as a traveller of great veracity, affirms as an eye-witness, that there are yet some hot springs in that part of the country, opposite to Tenedos. The learned Mr. Le Chevalier, in like manner speaks of those hot springs in his travels in the Troas. (*Voyage à la Troade*, ii. 195.)

¹ Sec. 7, Book ii.; Adams' translation, i. 197; Littré's do. ii. 29.

² Regimen, ii. § 57, Littré's translation, vi. 571.

³ Sec. ix. See Littré's translation, v. 209.

through means of the mineral water. The patient was affected with a cutaneous disease, and proceeded from Athens to Melos to try the effects of hot baths. He was cured of the cutaneous disease; but died of dropsy.

Nothing, however, indicates that the treatment in this case was prescribed by a physician. Nowhere, in fact, in the professional records of those early, as indeed of less remote, times, do we find reason to believe that a resort, on the footing of a special medical prescription, to mineral waters—whether hot, warm, or cold, and whether taken internally or in the form of baths—was ever based on a knowledge of the useful application of the constituents of these waters in the management of any special disease. It is a fact worthy of remark, says a recent writer, that the ancient physicians occupy themselves almost exclusively with the temperature and effects of warm or cold baths, and very seldom refer to the internal use of mineral waters as medicinal agents. The purgative action of a few of them seems to have been turned to account; but, beyond this, little was done. Let it not be said in evidence of the fact that the use of mineral waters, both internal and external, was not left in the hands of the public at large and of empirics, and was not excluded from regular practice, that temples dedicated to Esculapius were purposely erected in the vicinity of mineral springs in order that persons resorting to them should enjoy the benefit resulting from the use of the water—as, for example, the temple in the neighborhood of the Asclepion at Cenchreae, in Corinthiaea, those of the same divinity at Corona and Pergamos,¹ as also at Athens,² &c.—for the correctness of the statement, though having the sanction of no less an authority than the great historian of medicine, Kurt Sprengel (i. 144), to say nothing of Hecker, Vetter, Osann, and other hydrologists, as also of Dr. Adams, has been called in question. On this point, I need not say more than that having examined the above ancient authorities, as also Plutarch,³ on which the statement is supposed to rest, I cannot for a moment refuse to conclude, with M. Daremberg,⁴ that in all that is said relative to the location of the temples in question, we can only discover evidence of the fact that the object in view was the selection of elevated and healthy spots, in the vicinity of streams or springs of pure water suitable as a beverage, and not of any kind of mineral water. In two cases only of all those appealed to, can there be any difference of opinion on the subject. In regard to the first, Pausanias, while speaking of the Temple of Cenchree, mentions a spring of warm saline water. But it is evident from the context, that the temple was not

¹ Pausanias, ii. 24, iv. 34, viii. 25. See Gedoyn's Trans. i. 304, ii. 294, iii. 331.

² Xenophon, Memorab. Socr. iii. 13, 3.

³ Roman Questions, 94; in Amyoth's Trans. of Works, ii. 358-9.

⁴ Œuvres d'Oribase, notes, ii. 576.

in any way connected with the spring; for, after referring to the former, the author says: "The baths of Helena may also be seen at the Cenchreæ. It is an abundant stream which falls from the top of a rock into the sea, and the water of which is salt and naturally as warm as water heated on the fire."¹ Respecting the second—that of the temple at Athens—it is clear, from the reference to it by Xenophon and Pausanias, that the spring contained in the building was selected not because it was medicinal but because it was less brackish than the ordinary water of the vicinity.

But, however this may be, the practice of resorting, for medicinal or other purposes, to mineral springs became very general in Greece, and subsequently at Rome; and while Plutarch gives us a glowing picture of the crowds that thronged the thermal establishments of Æsepsus in Eubœa,² Seneca no less expatiates on the multitudes that annually visited, for health or pleasure, the springs of Baïa.³ Pliny tells us, while making the statement above alluded to relative to Homer, that in his time the practice of resorting to mineral waters for their medicinal properties was universal—"videlicet quia medicina tunc non erat hæc, quæ nunc aquarum per-fugio utitur."⁴ Nero, as we learn from Suetonius,⁵ caused the waters of Albula, near Tivoli, to be brought to his golden palace in Rome. The practice of resorting to such waters was, indeed, carried to an almost incredible, extravagant, and injurious excess. Pliny states that many persons prided themselves on enduring the heat of mineral waters for many hours together—a practice which he regarded as most pernicious. A little further on he adds: "There is another mistake, also, of a similar description, made by those who pride themselves upon drinking enormous quantities of these waters; and I myself have seen persons before now so swollen with drinking it, that the very rings on their fingers were entirely concealed by the skin, owing to their inability to discharge the vast quantity of water which they had swallowed."⁶

But at the period here referred to, and even much later, the practice of resorting to mineral waters internally or externally as regular remedial agents does not appear, from all I can collect, to have been very usual among regular and authorized medical practitioners. It was still followed, very generally in, as it were, an empirical manner by the public at large, without reference to the opinion or recommendation of regular physicians. Doubtless some of these, as, for example, Archigenes,⁷ of Apamea, who resided at Rome under Trajan, and Antyllus,⁸ who flourished there some time after, had evidently great confidence in the use of those agents, espe-

¹ Pausanias, bk. ii. chap. 2; Gedoyn, i. 304.

² Sympos, bk. iv. chap. 4; Works, Amiot's Trans. xviii. 221.

³ Ep. 51.

⁴ Loc. citat.

⁵ Life of Nero, chap. 31.

⁶ Loc. citat.

⁷ Ætius, 1 Sermon. iii. p. 167.

⁸ Oribasius, Dæmberg's Tr. ii. 383.

cially in the form of baths, and hence must have resorted to them in their practice. But we may reasonably feel a reluctance to believe that such physicians constituted the majority. At any rate we have the certainty that many of their contemporaries, as also of their immediate predecessors and successors—and of the more influential and celebrated, too—so far from prescribing them under ordinary circumstances, if at all, expressed themselves in decided terms adversely to their use under the impression that they were hurtful; while others, among the most celebrated of the day, appear to have regarded them as destitute of remedial effects, and, of course, useless, but at the same time harmless. Thus Herodotus—the physician, not the historian, with whom he has often been confounded—who also lived at Rome under the Emperor Trajan, and a portion of whose writings has been preserved by Oribasius, speaks of persons who, to their own detriment, as he thinks, had recourse to thermal waters without professional advice. Galen, on the other hand, seems to have held those waters in light esteem, and was of opinion that those artificially prepared were as useful as those obtained from natural springs. There is no evidence that I can find that he prescribed them himself. He contents himself¹ with saying that some persons were accustomed, in the spring or autumn, to drink sulphureous, bituminous, or nitrous (alkaline) waters with a view to their purgative effects, just as other persons use ordinary cathartics or emetics in order to preserve themselves from the baneful influence of morbid agencies generally. In another work² he tells us that some persons subject to calculous disorders, drink mineral waters as a precautionary means, but he does not tell us at the same time that they were right in doing so. At any rate it appears that, in his opinion, if, peradventure, advantage is derived from the use of mineral or of sea water, the result is due to the substance which predominates in the water, and would be obtained by mixing that substance with common water, and hence is not the effect of anything peculiar appertaining to the mineral spring as such.

M. Daremberg, in his interesting and instructive Commentary on the 10th Book of Oribasius (chap. 3), calls attention to the circumstance that no sooner did physicians begin to investigate the remedial influence of mineral waters, than the same discordance of opinion occurred among them relative to the explanation to be given of their action on the system which we discover among our contemporaries: some maintaining that it is sufficient to ascertain the mineral constituents of a spring in order to judge of its action, while others regard such mineral spring as constituting a peculiar remedy, the action of which cannot be discovered otherwise than through means of experience. Archigenes³ and Antyllus,⁴ already referred

¹ De Sanitas Tuend. Lib. iv. cap. 4.

² De Rerum Affect. Diagn. et Cur.

³ Op. cit. and Sprengel, Hist. de la Méd. ii. 79.

⁴ Op. citat.

to, belong to the former category. Both dividing mineral waters according to the nature of their constituent principles, the former into nitrous (alkaline), aluminous, saline, and sulphureous, and the latter into alkaline, saline, aluminous, sulphureous, bituminous, vitriolic (with sulph. cop.), ferruginous, and compound.

Among physicians of the second category we may cite Herodotus; while Galen would appear to hold a middle course; on the one hand maintaining, as was seen, that the advantage peculiar to each mineral spring may be obtained by dissolving in common water a large quantity of the peculiar substance predominating in that spring; and, on the other hand,¹ averring that in respect to hot springs, the predominant principles of which are little apparent, it is best, in judging of them, to trust to experience.²

But whatever may be the case in relation to that matter, certain it is that the physicians of ancient Rome, as indeed those of Italy generally, although not, perhaps, all patronizing the mineral springs situated about the capital or anywhere else as much as these deserved, were far from being all unmindful of their beneficial effects in a variety of complaints. Sure it is, also, that those springs were at one time very commonly resorted to by the public at large.

Whether such was the case at the precise time Horace performed the journey, to which your attention is here called, I have not now the means to ascertain. But in the absence of proofs relative to that question we are, I think, justified in deciding it in the affirmative, from the circumstance that not long subsequent to that period the internal and especially the external use of mineral waters had become general, and it is not probable it could have started up suddenly. The Emperor Augustus was treated in the latter way; being recommended, for the cure of the gravel and severe rheumatic pains, the waters of Albula, a small river at Tivoli, rising in a small lake or pool called the Solfatara and flowing into the Anio. The medicinal virtues of these waters were highly lauded by the most illustrious physicians of those and subsequent times—Musa, Andronicus, Ætius, Paulus Ægineta, as also by Strabo and Vitruvius, and, as we learn from Braccius, were, so late as the sixteenth century, used with advantage. These waters are of a sulphureous character, and so strongly impregnated as to exhale a vapor, imparting to the surface the appearance of its being covered with a thick smoke;” thus justifying the words of Martial: “Canaque sulphureis albula fumat aquis.” They are cold, and were considered useful not only in the treatment of the diseases mentioned, but, as Pliny (chap. vi.) informs us, in that of wounds. The emperor having derived relief from them, they, as a matter of course, soon became fashion-

¹ De Med. Simpl. Lib. i. cap. vi.

² Sanitas Tuend. Lib. vi. cap. ix.

able. They were in great request among the Romans for their medicinal properties, so that they were frequently carried to Rome for bathing purposes; but the imperial patient would scarcely have been subjected to the treatment had not his medical adviser been aware of the usefulness of the remedy.

We learn from the author just mentioned, as also from Strabo and others, that the medicinal virtues of many springs, in the treatment of numerous and diversified diseases, was fully appreciated in their times, not only in Italy but in other countries subject to the government of Rome; and we know, from the indications left by the ancients in their geographical itineraries and the inscriptions discovered amid the ruins in the vicinity of those springs, that in many places buildings of a costly kind were erected for the accommodation of those who resorted to them for purposes of health or pleasure. Those of Albula, the ruins of which are still visible, are commonly ascribed to Agrippa. During the time of Augustus, the baths of Aix in Savoy, called then the Sextian waters from the Roman general Sextius, by whom the establishment was founded after his victory over the Saliens, were in great favor.¹ Listen to what Pliny says on the subject of such springs: "On all sides, and in a thousand countries, there are waters bounteously springing forth from the earth, some of them cold, some hot, and some possessed of these properties united." "Then, again, there are others that are tepid only or lukewarm, announcing thereby the resources they afford for the treatment of diseases, and bursting forth for the benefit of men alone out of so many animated beings." "But nowhere do they abound in greater number, and afford greater variety of medicinal properties, than in the Gulf of Baia; some being impregnated with sulphur, some with alum, some with salt, some with nitre, some with bitumen, while others are of a mixed quality, partly acid and partly salt." "According to their respective kinds, these waters are beneficial for diseases of the sinews, feet, or hips, for sprains and for fractures; they act, also, as purgatives upon the bowels, heal wounds, and are singularly useful for affections of the head and ears. Indeed, the waters of Cicero (of his country-seat—the Academia between Lake Avernus and Puteoli, on the sea shore) are good for the eyes." "In Campania, too, are the waters of Sinuessa remedial, it is said, for sterility in females, and curative of insanity in men." "The waters of the island of Ænaria (as also those of Acidula, Stabiae, Venafrum) are curative of urinary calculi." "The waters of Thespie insure conception to females, as also those of the river Elatus in Arcadia." "The waters of Lake Alphius remove white mor-

¹ Livy Epitom. p. 56; Pliny, xxxi. "C. Sextius proconsul, vieta salluviorum gente coloniam Aquas Sextias condidit, ob aquarum copiam e calidis frigidisque fontibus, atque a nomine suo ita adpellatas."—Livy.

phew." Those "of the river Cydnus in Cilicia are curative of gout." "The state of Tungri, in Gaul, has a spring of great renown, which sparkles as it bursts forth with bubbles innumerable, and has a certain ferruginous taste, only to be perceived after it has been drunk. This water is strongly purgative, is curative of tertian fevers, and disperses urinary calculi." "The springs of Leucogæa, between Puteoli and Neapolis (on the present Monte Posilippo), are curative of eye diseases and of wounds."¹

All this was written scarcely more than sixty or seventy years after Horace's satire saw the light, and the practice to which it refers could surely not have been unknown to him. But we have evidence derived from the statement of the poet, as may be seen in one of his epistles, that less than twenty years after the date of his journey, the waters of Baïa were frequented by the fashionables of Rome and other parts of Italy, to say nothing of the more distant provinces of the empire, and he himself resorted to them annually for the benefit of his health, until advised by Antonius Musa to pursue a different course. This physician had recently acquired a high reputation for the cure, by cold baths and a cooling regimen, of an hepatic complaint under which Augustus labored, and which others had ineffectually treated by an opposite method. By him Horace, who was troubled with what some have regarded as gout and others as nervous prostration—the natural result of his irregular mode of life, his voluptuous tastes, and his addiction to the pleasures of the table—was recommended to make use, in winter, of cold douches at the mineral springs of Clusium (Chiusi), in Etruria, and of Gabii, in the Sabine Territory (Torti), to abandon the baths of Baïa as being useless to him, and to spend the rest of the winter at Salernum or at Velia (Castella-a-Mare).

But this will suffice to show that the Romans were, from an early day, much in the habit of resorting to mineral springs for the cure of various diseases, that the practice was probably common in the time of Horace, that the poet was himself for some time a frequent sojourner at the baths of Baïa, and resorted to kindred places, and that hence his silence respecting the Aqua Puzza cannot be imputed to a general neglect, on his part or on that of the public at large, of the therapeutic agency of such springs.

Add to what precedes that whatever may have been the sentiments of Horace respecting the medicinal virtues of mineral waters, his silence respecting the Aqua Puzza signifies nothing, inasmuch as that stream, though impregnated in the way mentioned, was not then, any more than it has been since, resorted to for therapeutic purposes, and could well be overlooked without inducing us to suppose that the author was not acquainted with, or friendly to, the use of thermal and other mineral waters.

When at Caudium, and during the entertainment given them by Cocceius,

¹ Pliny, bk. xxxi. cap. 2, 3, 4, 5, 7, 8.

Horace and his party witnessed what he calls a "memorable encounter" between Sarmentus the buffoon, and Messius Cicerrus. The latter individual, we are told, traced his pedigree to a renowned race—the Oscians. Sarmentus was a fugitive slave. "Sprung from such ancestors," says Horace, "these noble opponents met in fierce combat. Sarmentus commenced the attack: 'I tell you, sir, that you have the look of a wild horse.' We all burst out a laughing. Messius unmoved, replied, 'Sir, I receive your challenge,' and shakes his head. 'O!' says Sarmentus, 'what a dangerous fellow here would be, were not your horn lopped off, since, though thus dismantled, you threaten so hard.' (For you must know that the left side of his forehead was occupied with an ugly scar, which was surrounded with black bristles.) Having rallied unmercifully about his unhappy face, and the infamous disease of his country," *Companium in morbum*, "he at length begged of him to dance the part of Polyphemus, assuring him that he needed neither mask nor tragic buskin to acquit himself well. To all, Cicerrus answered with great keenness. 'How now, sirrah? have you consecrated your chain as yet to the household gods? Remember, that your being a scribe does not one jot lessen your mistress's authority, who may still exercise the discipline of the whip at pleasure. But how came you, Mr. Spark, to run for it? A pound of bread a day is amply sufficient to support your lank fabric.' Thus," continues Horace, "we were agreeably diverted all supper time."

I cannot say that I discover subject of much merriment in the episode referred to. As has been said by Gibbon, the ribaldry of two buffoons surely belongs only to the lowest species of comedy. They might divert travellers in a humor to be pleased with everything; but how could a man of taste reflect on them the day after? (*Miscel. Wk.* iv. 345.) But times have changed and tastes with them. Things which appear to the present generation of men stale, flat, and insipid, may have been very differently considered nineteen centuries ago, when the zest of the allusions and hints dropped, and the sarcasms indulged in by the interlocutors, which escape modern readers, were felt, and felt keenly too, by those for the amusement of whom they were intended. My object in referring to the subject is to call attention to a question respecting which considerable uncertainty has existed among commentators from the days of Acon and Porphyryon, to our own. I allude to the true nature of the disease which affected Messius Cicerrus, and furnished matter of jest to his opponent, Sarmentus. That it was one conferring no credit on the moral character of the individual laboring under it, is evident; for it is thrown up to the patient as a subject of reproof, or with the view to cast a stigma upon him. It must have been a disease prevailing extensively among Messius's countrymen; inasmuch as it is designated by the name of his native place—*Campanus morbus*. Every one knows that the natives or long residents of the

maritime portion of the Campania—the Oscians—were proverbial for their addiction to acts of immorality, and Horace would seem to have thought it sufficient to refer to the nationality of Messius and the disease he brought from his home, in order to indicate that he was a dissipated reprobate.

The Campanians, but more especially the inhabitants of Capua, were addicted to the most infamous debaucheries and revolting practices. History has recorded facts in abundance to show that the pleasures of Capua exercised an influence on the army of Hannibal fully as mischievous as that which had been produced on the Romans by the battle of Cannæ. Thus says Festus: *Frequentissimus fuit oscis usus libidinum*. Of one of these practices, the very idea is calculated to shock delicate minds—*Ori morijeri erant*, or, as expressed in the verses of Ausonius: *Et quam Campanis capitalis luxu inussit*. Plautus plays on this passage in the second act (Scene 4th) of his *Trinummus*.

——— *sed campas genus*

Multo Syrorum jam antidit patientia.

(The inhabitants of the Campania are even more patient than the Syrians.)

Sanadon is of opinion that in employing the words *Campanus morbus*, Horace had no particular disease in view, but would seem to have intended to designate the horrid debaucheries just alluded to. Guicherat suggests that reference is made to some herpetic eruption. Others think that we must recognize in the cutaneous affection which disfigured the forehead of Messius a symptom of the venereal disease, the horny scar having some resemblance to that produced by *rupia*. Johannes Bond ventures on the following explanation: *In magnus verrucas, quæ instar cornuum innascebantur in fronte gentis Campanæ*. A late writer, Mr. Walckenaer, who has investigated thoroughly every topic connected with the life and writings of Horace, is disposed to adopt the opinion of the scholiast Cruquius, that the cause of disfigurement consisted of warts or fleshy excrescences which were more common in the Campania than in any other place, and broke out on the face.

In all that precedes on the subject, we do not discover a single element upon which to base a satisfactory opinion, so that the question remains now as unsettled as it was in olden times.

